DOCUMENT RESUME

ED 397 554 EA 027 950

AUTHOR	Goertz, Margaret E.; And Others
TITLE	Systemic Reform. Volume II: Case Studies. Studies of Education Reform.
INSTITUTION	Consortium for Policy Research in Education, New Brunswick, NJ.; National Center for Research on Teacher Learning, East Lansing, MI.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	Jul 95
CONTRACT	RR91172005
NOTE	156p.; For Volumes I-III of this particular study, see EA 027 949-951. For all 12 final reports (36 volumes) in this series of studies, see EA 027 926-961.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Case Studies; *Change Strategies; Classroom Techniques; *Educational Change; Educational Policy; Elementary Education; Instructional Improvement; *Instructional Innovation; Junior High Schools; Mathematics Instruction; Middle Schools; Organizational Change; *Organizational Development; Reading Instruction; *School Restructuring; State School District Relationship; Teacher Effectiveness; Writing Instruction
IDENTIFIERS	*Studies of Education Reform (OERI)

ABSTRACT

A relatively systemic approach to education reform emerged in the 1990s as one way of addressing policy fragmentation. This volume contains the case studies from a study that sought to: (1) expand knowledge of state approaches to systemic education reform; (2) examine district, school, and teacher responses to state reform policies in a small number of reforming schools and school districts; (3) identify challenges at the state, district, school, and classroom levels to reforming education; (4) examine the capacity of the educational system to support education reform; and (5) provide guidance to policymakers at all levels of the education system as they design and implement education reform policies. The volume contains case-study information on 12 reforming schools located in 6 school districts in 3 states undergoing systemic reform--California, Michigan, and Vermont. The study targeted mathematics, reading, and writing instruction in grades 4-8. Each section describes state reform efforts (the state context and the components of reforms), district reform efforts, and teacher and school-reform activities. (Contains 34 references.) (LMI)

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CONSORTIUM FOR POLICY RESEARCH IN EDUCATION

Studies of Education Reform: Systemic Reform

Volume II: Case Studies

Margaret E. Goertz, Project Director
Robert E. Floden
Jennifer O'Day

U.S. DEPARTMENT OF EDUCATION
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This work is part of the Studies of Education Reform program, supported by the U. S. Department of Education, Office of Educational Research and Improvement, Office of Research, under contract No. RR 91-172005. The program supports studies and disseminates practical information about implementing and sustaining successful innovations in American education. This document does not necessarily reflect the position or policy of the U. S. Department of Education, and no official endorsement should be inferred.

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Studies of Education Reform: Systemic Reform

Volume II: Case Studies

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Preface

The reform of education has been a major focus of policymakers at the local, state and federal levels since the publication in 1983 of *A Nation at Risk*. Reform efforts have targeted all stages of education, from pre-school to school-to-work transition, and have addressed nearly every aspect of the public elementary and secondary education system: curriculum and assessment, teachers' preparation and their professional lives, school organization and management, technology, and parental and community involvement. To increase the knowledge base for identifying, implementing and sustaining successful reforms in these areas, in 1991 Congress requested the Office of Research at the U.S. Department of Education's Office of Educational Research and Improvement (OERI) to investigate education reform. In response, OERI identified and funded 12 studies of different aspects of current education reform, including a study of the systemic education reform movement.[1]

The Policy Center of the Consortium for Policy Research in Education (CPRE), in conjunction with the National Center for Research on Teacher Learning (NCRTL), was awarded the contract to conduct the Systemic Reform study. As used in this study and in developing approaches in a number of states, systemic reform embodies three integral components: the promotion of ambitious student outcomes for all students; alignment of policy approaches and the action of various policy institutions to promote such outcomes; and restructuring of the public education governance system to support improved achievement. This research, which built on studies of systemic reform undertaken earlier by CPRE in nine states, and on other studies of teacher learning and school organization and change, was designed to (1) expand our knowledge of state approaches to education reform, (2) examine district, school and teacher response to state reform policies in a small number of reforming schools and school districts, (3) identify challenges at the state, district, school and classroom levels to reforming education, (4) study the capacity of the educational system to support education reform, and (5) provide guidance to policymakers at all levels of the education system as they design and implement education reform policies.

The Systemic Reform study was conducted in three stages. In the first year of the study, we reviewed the emerging literature on systemic reform, and commissioned four papers that addressed issues related to the preparation and professional development of teachers and others in support of systemic reform, paying particular attention to the policy linkages between curriculum reform and teacher learning. These papers became the focus of a two-day national conference targeted to education policymakers and practitioners, and were used to refine the overall design of the second and third stages of the study. In the second stage, project staff conducted intensive case studies of twelve reforming schools located in six reforming school districts in three states that were undertaking systemic reform—California, Michigan, and Vermont. The third stage of the study entailed the preparation of state-level case studies and cross-site analyses that examined the scope, substance and coherence of state reform policies; teacher, school and school district reform activities in the context of these state policies; and the capacity of all levels of the system to support education reform.

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[1] These twelve studies are Assessment of Student Performance, Curriculum Reform, Early Childhood Education, Parent and Community Involvement in Education, School-Based Management, School-to-Work Transition, Student Diversity, Students at Risk, Systemic Reform, Professionalism of Educators, Technology and Uses of Time.

The study's findings and methodology are contained in this three-volume technical report. *Volume I* begins with a summary of the literature review and commissioned papers (Chapter 1), the study methodology (Chapter 2), and the education reform strategies and policies in the three study states. In Chapter 4, we look across the schools, school districts and states in the sample to describe the strategies these sites used to develop a vision of reform, align relevant policies and support restructured governance systems, and the challenges they faced in implementing these strategies. Chapter 5 uses surveys of, and interviews with, teachers in our sites to characterize their instructional practices in mathematics and language arts in relationship to reform policies and opportunities for professional development. In Chapter 6, we present a framework for thinking about the concept of capacity and capacity-building strategies and policies in support of education reform, and examine how our sites used systemic tools to enhance the capacity of teachers and their schools. Chapter 7 identifies some common lessons for policymakers who choose to take a standards-based approach to instructional improvement, and suggests a set of research questions about both the role of capacity-building in systemic reform and broader aspects of education reform.

Volume II contains the case studies of California, Michigan and Vermont. These include more detailed information on state policies, and describe and analyze reform efforts in our small sample of reforming schools and school districts in each state. The findings reported in Chapters 4 through 7 of *Volume I* are based on data contained in these case studies, as well as the teacher survey. *Volume III* contains a description of the study methodology and copies of the interview protocols and teacher surveys used in the data collection.

Acknowledgements

We are grateful to the many people who assisted in this study. The study would not have been possible without the excellent cooperation of the teachers and school and school district administrators in our six study districts; state department of education personnel in California, Michigan and Vermont; and individuals in universities and other education organizations in these three states. We appreciate the time and effort that all of the respondents put into answering our numerous questions. The information and insights they provided us were invaluable.

We are indebted to Kimberly Bogdan (CPRE), David Gamson (Stanford University) and Jordy Whitmer (Michigan State University) who assisted us in the collection and preliminary analysis of the interview data for the Michigan, California and Vermont case studies, respectively. Chris Chiu (MSU) painstakingly analyzed the teacher survey data and produced the tables presented in Chapter 5 (Volume I) of this report; Jordy Whitmer organized these survey data.

Many individuals contributed to the overall design of the study. Our Advisory Panel reviewed our initial research plan and provided direction for the commissioned papers, national conference and site selection. Members of the Advisory Panel were Gail Burrell (Whitnell High School, Greenfield, WI), Jane David (Bay Area Research), Mary Kennedy (National Center for Research on Teacher Learning, MSU), David Mandel (National Board for Professional Teaching Standards), Andrew Porter (Wisconsin Center for Education Research, University of Wisconsin-Madison) and Kenneth Zeichner (University of Wisconsin-Madison). Cynthia Levinson prepared the review of literature on systemic reform with the assistance of Diane Massell. Jane David, Hendrik Gideonse, Judith Warren Little and Frank Murray contributed commissioned papers. Conversations with Deborah Ball, Thomas Corcoran, Susan Fuhrman, Diane Massell, Milbrey McLaughlin and Marshall Smith helped us conceptualize the study and think about ways of framing our analyses and interpreting our data. David Cohen and Thomas Corcoran also provided valuable background information on education reform in Michigan and Vermont.

We consulted several sources when designing our teacher questionnaires. Andrew Porter shared instruments and data from his teacher surveys with us. Joan Talbert, Sharon Bobbitt, Hilda Lynch, John Smithson and Iris Weiss helped us identify, obtain and interpret results from other teacher questionnaires.

This final report was greatly strengthened by reviews of earlier drafts by Deborah Ball, Richard Elmore, Susan Fuhrman and Jim Fox. We also thank Jim Fox for his support of our work over the life of this study. As our project monitor, he provided substantive and timely feedback on our draft products, facilitated our communication with OERI, and helped us through uncertain times.

The national conference would not have been possible without the assistance of Stacy Gands, Melissa Lomench, Lynn McFarlane, Patricia Michaels, and Debi Slatkin of CPRE. They handled all of the meeting logistics, prepared and disseminated background materials, and communicated with the 250 persons who attended the conference. Their hard work and attention to detail contributed to the success of the meeting.

We are especially grateful to Patricia Michaels, who produced the final report on a very short timeline. She patiently formatted our text and tables, and caught and corrected our errors before this document went to press. Additional secretarial assistance was provided during the course of the study by Stacy Gands, Robb Sewell and Dawn Weniger of CPRE and Wendy Reed of MSU.

Finally, this report is the culmination of a three-year collaboration by the authors. We designed the study, conducted the cross-site analysis, and reviewed all products as a team. We were individually responsible for the collection and analysis of data and the preparation of case studies for one state—Robert Floden for Vermont, Margaret Goertz for Michigan and Jennifer O'Day for California. In addition, Floden oversaw the analysis of the teacher survey data and wrote Chapter 5 (Volume I) with John Zeuli and Chris Chiu. O'Day wrote Chapter 6 and Goertz was the principal author of Chapter 4 of that same volume. We take collective responsibility, however, for the findings and views presented in this report.

Margaret E. Goertz, Project Director
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Jennifer O'Day

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Appendix A

Chapter 1

Systemic Reform in California

Jennifer O'Day

State Reform Efforts[1]

Reform Context

California has been active in systemic curricular reform for over ten years and has been one of several core states studied by CPRE throughout this time period. Previous CPRE publications have thus explored the overall state context, reform strategies, and issues in considerable depth. The intent of this case study is to build on the existing body of policy research rather than duplicate it. For this reason, I have appended the ten year case study prepared by Kirst and Yee,[2] (Appendix A) and will include here only a brief review of the reform context, focusing more on recent developments and capacity building strategies.

Demographic Context

California enrolls over five million students, approximately one-ninth of the nation's public school enrollment. California has more students in grades K-6 than New York has in its entire K-12 system and experiences additional enrollment growth of close to 200,000 students per year, almost twice the national average and twice the total enrollment of Vermont. By the year 2001, the student population in the state is expected to reach seven million.

The demographic challenge goes well beyond the total numbers, however, as the cultural, linguistic and economic makeup of the student population is also the most diverse in the nation. California has been a "majority minority" system for a number of years, with non-Hispanic white students currently representing 45 percent of the total. Over a third of the state's students are Latino, and at just under 11 percent, California also has the largest proportion of Asian students in the country. African American students are slightly lower in number, making up approximately 9 percent of the total.

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[1] This report was prepared in early December 1994 and does not reflect changes since that time, such as the current review of the curriculum frameworks or specific proposals for a new state assessment.

[2] M. W. Kirst and G. Yee, "An Examination of the Evolution of California State Educational Reform, 1983-1993," in D. Massell and S. Fuhrman, *Ten Years of State Education Reform: Overview with Four Case Studies* (New Brunswick, NJ: Rutgers University, Consortium For Policy Research in Education, 1994), Appendix A.

By most accounts, however, it is California's linguistic diversity that represents the greatest challenge for educators (though some would argue that this same diversity is potentially one of the state's greatest assets as well). The most recent figures from the California Department of Education (reported in 1993) put the percentage of students who are limited English proficient (LEP) at over 22 percent systemwide, and 26 percent in the elementary grades. Slightly more than three-fourths of the LEP students are Spanish speaking. By all accounts, the state lacks the resources—personnel, instructional materials, and support services—necessary to provide equal educational opportunity to these students. For example, a respondent in the bilingual office of the California Department of Education (CDE) estimated that there is a shortage of 24,000 bilingual teachers in the state. To address this deficit, however, the University of California (UC) and California State University (CSU) systems combined produce only 350 bilingual teachers per year. In this administrator's words, "It's a dismal situation."

Fiscal Context

Part of the reason for the dearth of resources for the LEP population is the continuing economic recession and fiscal crisis in the state, which has brought a decline in educational resources for all students. With education expenditures at over $27 billion, California still spends less per pupil than any other industrialized state and well below the national average. Inflation-adjusted per pupil expenditures increased a mere 6 percent overall between 1984 and 1993 and have declined sharply since 1989-90. Moreover, because of California's property tax reform, Proposition 13, most locals have been unable to raise additional funds for school improvement. Housing the growing numbers of students is itself a major challenge, and class sizes in the state are the second highest in the nation.

Political Context

Partisan Politics and the Superintendency. Educational policymaking in California is highly politicized, a situation that is exacerbated by the partisan breakdown of the policy-making bodies and posts. Although officially a non-partisan position, the elected State Superintendency of Public Instruction has been held by a Democrat for more than a decade. Meanwhile, Pete Wilson and his two-term predecessor George Deukmejian are both Republicans, while the highly partisan state legislature was firmly in the hands of the Democratic Party up until the 1994 elections. It is not surprising, therefore, that the Governor and legislature were frequently at odds over fiscal and educational policy.

Almost more heated than the confrontations between the legislature and the governors, however, were those between former State Superintendent Bill Honig and both Deukmejian and Wilson—and the State Board of Education they appointed. These confrontations ended only with Honig's conviction on conflict of interest charges and his mandatory resignation from the post. With his departure, the state education agency lost the architect of its entire reform effort and a tireless intellectual leader.

Filling the void, William D. (Dave) Dawson is now completing the second year of what was to be a 3-month tenure as Acting Superintendent. Dawson, who by his own and others' accounts, is manager rather than an educator, has continued Honig's instructional policies and systemic reform strategy, but without the dynamism and forcefulness of his former boss. Also continuing have been the battles over funding and education policy with Pete Wilson, who was unable to gain legislative approval for his nominees to the post during this time. The battles will probably not end when Dawson leaves either, for Wilson's education advisor Maureen DiMarco lost her November bid for the superintendency to Democratic assemblywoman, Delaine Eastin.

Proposition 187. While it is as yet unclear what the education strategy of the new chief will be, what is clear is that Pete Wilson has won two major battles on the education front in the past three months: the dismantling of the California Learning Assessment System (CLAS, discussed later) and the passage of Proposition 187.

Proposition 187 brings together the three major education policy contexts in California—the fiscal, the demographic, and the political. California schools 45 percent of the nation's immigrant students, many of whom are low income and limited English proficient. Though California spends less on these students than other states, there is a perception that the public services provided to immigrants—and particularly to undocumented ("illegal") immigrants—are draining the scarce fiscal resources from native born and legal residents. This is the rationale behind Proposition 187, which prohibits the provision of public education , health and other services to those suspected of being in the U.S. illegally and requires school and health personnel to report such individuals to the immigration service. Such laws are not unprecedented. The state has a history of targeting immigrants in times of recession (e.g., the Chinese Exclusion Act of 1872), and the deepening recession of the past two years has brought a tide of anti-immigrant attacks, including incidents of physical assaults.

Picking up on this growing anti-immigrant sentiment and battling a twenty-point deficit in the polls earlier in his campaign, Wilson decided to make immigration—and Proposition 187—a central campaign issue. Though opposed by teachers unions and other education groups, 187 passed by an overwhelming majority in the polls, and helped put Wilson back in the Governor's mansion. Many educators have vowed not to enforce 187, which is currently tied up in the courts, but already there is evidence that children of undocumented residents have been withdrawn from school and are staying away from medical clinics. With California's large immigrant population, the impact of the measure could be substantial.

Policy Direction. Proposition 187 did not seem to have a decisive impact on the Superintendency election, however, though it is still unclear how state leadership in education will take shape in the coming months. Apart from her opposition to the referendum, none of the respondents in this study could summarize Eastin's program for education, an indication that it is still fairly amorphous. Moreover, prior to the election, several leaders in the CDE suggested that neither of the candidates "had a clue" about what comprehensive systemic education reform was all about or about the challenges of running such a massive bureaucratic system. Moreover, it is equally unclear what course the legislature will take in education. Not only is there a new Republican majority, but the departure of Eastin for the Superintendency and the retirement of Gary Hart, the long-time education advocate and leader in the state Senate, leaves a leadership and expertise void in that branch of education governance.

Reform Strategy in Brief

In 1993, Bill Honig described the California reform strategy as consisting of three stages: setting the vision of the "thinking curriculum"; developing systemic policy supports for that vision; and networking. This case study adopts a similar three part organization. However, because the strategy has developed over time with considerable overlap in the "stages," I discuss it more as a three pronged approach and define the prongs slightly differently than does former Superintendent Honig.

California has based its education policy over the past decade primarily on a strategy of curricular reform. In the words of a top CDE administrator, the reform seeks to ensure "that students have a rich and rigorous core curriculum and that all kids have access to that." The more specific articulation of that vision can mainly be found in two types of documents: the discipline-based curriculum frameworks and the broader grade-level reform documents that present a direction for the desired school-based changes at the elementary, middle, and high school levels.

The second prong of the strategy is the alignment of state policy components to support the realization of the overall vision in general, and the content of the curriculum frameworks in particular. These components include primarily the adoption of textbooks and other instructional materials, student assessment, teacher and administrator professional development, and teacher credentialing and pre-service education.

Finally, the state has developed a number of strategies for supporting school-based change in the directions articulated in the frameworks and grade-level reform documents. Major programs and recent developments in each of these prongs are discussed in more detail below.

State Components of Systemic Reform: Recent Developments and Current Status

Curriculum

Mathematics. A new curriculum framework in mathematics was released in 1992, which according to the CDE director of mathematics instruction, advances the state of the art by focusing on developing a full instructional program in mathematics. Like the 1985 framework, this one emphasizes the goal of developing students' mathematical power. It organizes mathematical content into seven strands and encourages the use of extended investigations of mathematical problems and relationships. According to this state administrator, the framework "is not an easy read" and is intended as a manifesto and guide for curriculum developers, not for teachers and the general public.

Because few mathematics texts are aligned even with the 1985 mathematics framework, much emphasis in the past few years has been placed on the development and dissemination of mathematics "replacement units." Intended to replace relevant chapters of the traditional mathematics texts, six replacement units have been developed since 1990, covering such areas as fractions (fifth grade), understanding multiplication (third grade), and measurement and scaling. The instruction is designed to be hands-on and to encourage student exploration of mathematical concepts. In one such unit, polyhedroville, students explore geometric relationships in the context of creating a city from a variety of student designed polyhedrons.

The mathematics adoption for the new framework will take place this year (1994-95). The Department hopes to get better submissions from publishers and they expect to move away from the replacement unit strategy, in part because of the potential isolation of those units from a more comprehensive mathematics program.

English Language Arts. California has an integrated English Language Arts framework, which came out in 1987 and emphasizes student interaction with meaningful text, writing as a process, and literature-based approaches to the teaching of reading. A revised framework was originally scheduled to be released last year (1993-94) but the CDE decided that such revision was not warranted because "the principles and approaches in the '87 framework still represent where we want to go in language arts instruction." Instead, the department has chosen to focus attention on areas of the framework that were insufficiently developed or that had caused problems or confusion for teachers. These have been explicated in supplementary monographs on special topics.

According to the administrator of the language arts unit, "Reading is the biggest area of misunderstanding from the '87 framework." Based on feedback from the schools, the department concluded that the framework gave inadequate attention to early literacy instruction, especially for children who do not come from literacy-rich environments prior to school. In addition, the emphasis on meaning and whole language instruction was misinterpreted by some to mean there should be no phonics instruction. New publications argue instead for a balanced approached. Developed in conjunction with the California Alliance for Elementary Education, monographs have been or will soon be released on early literacy, phonics, grouping strategies, and other special topics.

In addition, although the adoption cycle for language arts will not be until 1996, the department is considering an interim adoption for early literacy (grades K-2).

Assessment

California Learning Assessment System (CLAS). The biggest development has been the Governor's September, 1994, veto of the funds for the state assessment, CLAS, and the subsequent dismantling of the program.

CLAS is the offspring of the defunct California Assessment Program (CAP), the funding for which former Governor Deukmejian vetoed in 1989. While CAP represented a step toward linking state assessment to the content of the state frameworks, it differed in significant ways from what educators sought to create in CLAS. Designed for system monitoring, CAP had used a matrix sampling design, which resulted in a "hodge-podge" of mainly multiple choice items drawn from a larger pool of items connected to the frameworks. It did not include extended response questions (except for the writing sample) and did not allow for individual scores.

CLAS was a nearly $50 million endeavor, including $26 million in its final year alone. The goal of CLAS was to develop a state of the art assessment that reflected the content of the frameworks, and included extended answer-performance tasks but also allowed for individual scores. The full program was to include both on-demand and curriculum-embedded (portfolio) assessment. At the time of the state interviews, department officials expressed the opinion that CLAS represented a solid step in the right direction. They had even piloted a Spanish version in an attempt to include a large number of students who had previously been excluded from state assessment.

But in September, Pete Wilson vetoed the amended appropriations bill for CLAS and eliminated the CDE funds to administer the program. Several factors seem to have contributed to the demise of what appeared to be a very promising assessment system.

1. Timing and the demand for individual scores. Pete Wilson had made a commitment to have a state assessment system that would provide parents individual scores so they could get feedback on how their child was doing in school. And he wanted such a system available by 1994-95. If it could not be done with performance assessment, he wanted to return to multiple choice testing. According to a respondent in the CLAS office, "We had to say it (performance assessment and individual scores) was possible because we did not want to go back to multiple choice tests." But the press for rapid development resulted in important mistakes, of which those opposed to CLAS took advantage.

2. These mistakes by the department of education include:

- Problematic initial scoring protocols

- Inclusion of inappropriate and controversial assessment tasks, due to the failure on the part of the designers to distinguish between what was appropriate for classroom instruction and what was appropriate "for a statewide assessment where everyone is forced to sit down and write about Rosa Parks." "We didn't put the tasks to a test of broad community values."

- The department was "unprepared for the depth of feeling and the discipline in the ranks of the opposition."

- And there were logistical and communication problems with the districts and schools, which enhanced the atmosphere of secrecy and manipulation.

3. Organized opposition. Organizations representing the extreme religious right encouraged furor over the nature of the test items—reading selections that emphasized diversity, questions that solicited children to write about feelings. According to a leading department administrator not long before the veto, "Assessment has been targeted as the key education issue by the opposition."

4. It was an election year.

California Assessment Collaborative. Another state assessment effort is the California Assessment Collaborative. Not officially part of the CDE, the Collaborative is funded by the Department as authorized by the legislature after Governor Deukmejian vetoed funding for CAP. The CAC is a collaborative effort of 29 projects in districts and schools in the both northern and southern California, designed to develop performance-based assessment tasks and to build capacity to use performance assessment as an integral aspect of instructional improvement. Teachers involved in the effort contributed to CLAS and tried out CLAS tasks, providing much of the "teacher voice" to the state assessment effort, in addition to their more locally based work. We do not know whether or how CAC will be affected by the elimination of CLAS.

Professional Development

There are several avenues through which the state supports professional development efforts linked to the systemic reform initiatives.

The California Subject Matter Projects. The major strategy for professional development of teachers in conjunction with the curricular reforms has been the Subject Matter Projects (SMPs). The origins of the projects can be traced to the Bay Area Writing Project (BAWP), which began as a purely local effort 21 years ago and was then funded by NEH in 1977 to expand statewide (into the California Writing Project) and nationally (The National Writing Project). The other SMPs were formed roughly ten years ago, modeled largely on the format and goals of the BAWP.

The impetus reportedly came from Honig when he noticed that the same teacher leaders were being nominated over and over for state framework development. The projects were an effort to expand the number of teachers knowledgeable about the curricular initiatives and to increase the pool of teacher leaders in the area of curriculum. According to the director of curriculum and instruction, the SMPs represent a "strategic approach."

"If I had five million dollars, I'd invest it in the SMPs right away."

But in the words of one project leader, the SMPs are really just a "quick fix," not the long term solution to professional development and instructional reform.

There are currently 90 sites of the SMPs in 11 curriculum areas. Because of their success and because of the core of active and vocal teacher networks, the projects have managed to augment their budgets even in the face of declining resources. Project directors are quick to point out, however, that $100,000 total budget for most project sites does not go very far. The projects are administered by the University of California (UC), in concurrence with the California State University (CSU) and the Superintendent of Public Instruction. An estimated 2 percent of the teachers in California have been through an SMP, while the Writing Project has reached approximately 40,000. The projects most relevant to this study are the California Mathematics Project, the California Writing Project, and the California Literature Project.

The main component of all the SMPs is the summer institutes, which are generally 4-6 weeks in duration and which provide an opportunity for teachers to work with other teachers in a specific content area—doing science, doing math, doing writing—but then also reflecting on and developing instructional and curricular strategies and projects. The institutes thus focus both on content knowledge and on pedagogical content knowledge.[3] Many of them are incorporating research—both teacher research and other research—into the institutes and follow-up.

All SMPs have some form of follow-up through the year with teachers who have completed the summer institute. Many provide opportunities for leadership development through on-going networks and projects as well as through responding to requests from districts and schools for professional development assistance. This assistance to districts during the academic year is one way the projects are trying to broaden their outreach and impact as well. Fees paid by the districts for these services help to support other project activities, including the even broader outreach through free Saturday seminars and workshops on special topics.

SB 1882 Professional Development Funds. In addition to funding the SMPs, SB 1882 provides $13 million to districts who in turn allocate it to schools for professional development. The one requirement is that the schools not be part of the SIP program, so the monies go mainly to support staff development in secondary schools. Approximately one-third of the districts in the state get SB 1882 monies, over which the state has essentially no control. State sources had no way of knowing how the funds are spent by the schools or their connection to on-going reform efforts.

In addition, this legislation provides $3 million to establish regional consortia and resource agencies. One important role of these consortia has been the training and coordinating of teachers participating in the scoring of the CLAS test. Thirty five hundred teachers throughout the state participated in CLAS scoring in the summer of 1994, an activity which itself was an important opportunity for professional development.

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[3] L. E. Shulman, "Those who understand: Knowledge growth in teaching," *Educational Researcher*, vol. 15, 4-14 (1986).

Professional Development Through Other State Sponsored Systemic Reform Activities. One rationale for aligned instructional policies is that activity in one component of the system can provide learning opportunities to enhance efforts in another. An example of this was just noted above: the scoring of CLAS tests provided teachers an opportunity to become more familiar with the content of the frameworks, with the nature of assessment and standards and scoring rubrics, and so forth. At the same time that these teachers were assisting this state endeavor, they were engaged in learning activities that could enhance their own teaching. Thus, state sponsored activity which is not ostensibly "professional development" may be an important avenue for teacher learning and capacity building in the system.

Beginning Teacher Support and Assessment Program (BTSAP). The BTSAP is the result of an earlier research project called the New Teacher Project, which funded pilot induction programs and then contracted for an independent evaluation of the impact of these programs on new teachers. The study found that support for new teachers made a difference in their performance, the quality of the curriculum and teacher satisfaction. As a result, the legislature allocated $4 million for the Beginning Teacher Support and Assessment Program. However, because the study showed that it cost $3,500 to $4,000 per teacher to get the desired results, the program can only service 2,500 of the state's 10,000 new teachers each year.

Some districts carry out their work with new teachers through the Mentor Teacher Program. Mentors receive a stipend to support the development of mentor-designed projects. Work with beginning teachers may be one such project, developing some aspect of the curriculum may be another. Up to 5 percent of the district's teachers may participate, depending on funding. The Mentor Teacher Program can thus be a source of capacity building in a variety of ways, including professional development of the mentor and other teachers.

The California School Leadership Academy. The California School Leadership Academy (CSLA), a quasi-independent organization, has been described as "the administrator training arm of the curriculum reform." An estimated 8-9000 administrators, mostly principals, have been through the CSLA programs. The focus is on developing instructional leadership congruent with the state reform activities. It is a fairly highly structured program, consisting of modules and using a trainer of trainers model for CSLA instructors. Last year 2300 administrators went through the Foundation Program, 2100 the School Leadership Program, and 100 participated in the Superintendents program. The CSLA also works with other initiatives, including the SB 1274 and the California Alliance for Elementary Education (see below).

Teacher Credentialing

California credentials 20,000 teachers every year, so reform of the teacher credentialing system is an area of potentially powerful impact on the system. Approximately one half of these newly credentialed teachers come through state accredited teacher preparation programs; the other half are from out of state or come to teaching through other routes.

Many of the changes in the credentialing system are within the purview of the legislature, but they are highly influenced by recommendations from the Commission on Teacher Credentialing. The Commission is an independent professionally-based body, not part of the CDE. The Commissioners are all teachers, who conduct their official business in open meetings 11 times/year.

Between meetings of the Commission, the staff handles applications for credentials, prepares studies and reports used by the Commission in its deliberations (examples include the New Teacher Project discussed above and the State Panel discussed below.), and handles complaints of misconduct and other disciplinary matters. The Commission also works with national efforts to develop teaching standards and professionalize the teaching force (e.g, NTASC for beginning teachers and the California task force on the NBPTS for experienced teachers).

The major development in recent years include the review of individual credentials and endorsements—the administrative credential, special ed credentials, and credentials for teachers of LEP students (the Culture, Language and Development [CLAD] credential and the bilingual [BCLAD] credential). When the legislature recently passed SB 1969, however, it may have undercut some of these efforts. SB 1969 is a very controversial bill that grandfathers in veteran teachers of LEP students, essentially waiving them from the CLAD requirements. Supported by the California Teachers Association (which represents the overwhelming majority of California teachers), the bill was strongly opposed by the California Association for Bilingual Education (CABE). It is predicted to hurt LEP students by removing incentives for teachers to obtain additional training in language development issues and strategies.

The most important current activity is a comprehensive review of the basic teaching credential requirements and standards. The Commission will be looking at all standards for the multiple subject (elementary) and single subject (secondary) credentials. The rationale for this review is that the standards have accumulated over time since they were first established in 1970. Because of these incremental changes, "the requirements don't cohere to form a continuum of what teachers should now." (Commission staff) The idea is to re-examine and reconsider the requirements in total. The goal is to reunite content and pedagogical preparation of teachers.

The review will be conducted through eight regional networks. The review committees in each region will include teachers, parents, school board members, business and industry representatives, professors, administrators, and university deans. They will hold hearings and report their finding to a state-wide panel which has yet to be names.

The standards being developed by the Commission are closely linked to the frameworks, which were described as "seminal documents for the Commission." New teachers are not *required* to be familiar with the frameworks ("We try to avoid requirements"), but if the standards are congruent with the frameworks, "then when [teachers] meet the standards, they are familiar with what is in the framework."

While the standards will apply directly to teachers credentialed through accredited California programs, half the teachers are credentialed by means of assessment because they come from out of state or other routes. The assessment used by the state is a special form of Praxis III which moves away from multiple choice. Reportedly 60 percent of the assessment involves the candidate writing about the content areas. The content of the assessment is "moving in the same direction" as the standards.

State Support for Site-Based Change

The third prong of California's reform strategy has been described as "networking" by former superintendent Honig. But in this section I will define it as site-based strategies many of which take the form of school networks.

School Networks

There are many kinds of networking efforts in California. Some are professional networks of individual teachers or administrators through the SMPs the CSLA or professional organizations. Others are networks of projects, such as those in the California Assessment Collaborative. My focus here is on networks of schools, which can be classified into three categories.

Subject-specific Initiatives. In mathematics, the main subject specific school network is Math Renaissance, a middle school initiative which is now in its third year. Also in initial stages of development at the time of the interviews was a similar initiative in elementary school math.

Last year, approximately one fourth of the California middle schools (245 schools) were involved in Math Renaissance. The Department had hoped to increased the number to 400 this year but were actually expecting to fall short of that target, in part because it costs a school $3000 to join and many schools are unwilling to sponsor the necessary teacher time. While in theory a school-based strategy, several observers who have been following the Renaissance described it more as a "teacher enhancement" effort. Local data from this study lends support to this description; almost no one in the districts or the schools mentioned Math Renaissance at all. And even though the middle school in CA2 was a "Renaissance school," neither the chair of the mathematics department nor the other two mathematics teachers interviewed knew much about the effort. The chair said he thought a couple of the other teachers were involved in it. One of the other respondents stated,

> If this is a Math Renaissance school, that's news to me—and I don't know what it means. Some teachers belong to Math Renaissance, but that does not make us a Math Renaissance school.

In English Language Arts, the CDE has established a pilot network of schools focused on early literacy, called REACH. The goal of this network is "to have every child at or above grade level in reading in an integrated language arts program by the end of third grade—in English or in the child's home language." REACH is a schoolwide literacy program that especially targets children below grade level and incorporates professional development and parental involvement. Network meetings are held three times per year. Based on evaluation of the pilot, there are plans for an English Language Arts monograph on the approach.

SB 1274 Restructuring Initiative. SB 1274 is a state funded restructuring initiative passed by the legislature in 1989 and funded in 1990. The first funding round provided planning grants to 212 schools in 1991 and 146 schools were funded for demonstration projects in 1992. SB 1274 is designed as a leadership/ lighthouse project rather than a pilot. The goal is to change unproductive habits embedded in the structure of school by using criteria that focus attention on student work and student learning.

To facilitate this endeavor, Project participants and staff have developed a process (called the "Protocol") to initiate on-going, school-wide reflection on instruction and student learning. The results of this process then feed back into the restructuring efforts in the school. There is also a network among the participating schools, and school teams participate in SB 1274 annual conferences to share what they are learning. The goal is to change habits within the school and to develop existence proofs of what can be done and lessons for the system.

Grade Level Networks. The principal school networking strategy is the grade level networks based on the visionary reform documents, *It's Elementary* (California Alliance for Elementary Education), *Caught in the Middle* (middle school network), and Second to None (high school network).

The middle school network came first, formed with foundation support after the publication of *Caught in the Middle*. The document provides a model for transforming middle schools, placing emphasis on the whole child and integrated instruction. Now in its third round, 400 of the 1400 middle schools in the state belong to the initiative's regional partnerships. They have developed a trainer-of-trainers model, a bi-weekly fax newsletter, which provides both substance and news, and regional symposia. By report of a leading administrator in the CDE, achievement levels are going up in schools that have been in the partnerships for all three years.

The California Alliance for Elementary Education follows a similar model. The reform document *It's Elementary* was very well received throughout the system and beyond. To join the Alliance as a full member, a school must agree with the set of principles and pay a membership fee equivalent to $1.00 per student enrolled in the school. The five principles and beliefs are: a strengthened curriculum; all students can learn; teachers as professionals; schools as caring communities; and measuring success. Benefits to membership include the fax newsletter, a professional bookclub, subsidies to the SMPs (send one teacher, get one free), monographs on important topics, involvement in teacher research, networking and a state wide conference with other elementary schools. Because the schools must already agree with the principles before they can join, the Alliance tends to attract more reform-minded schools. "The ones who join first are the willings-and-ables." To compensate somewhat for this tendency and broaden the outreach, Alliance organizers, in conjunction with the Chapter 1 staff, successfully targeted for recruitment 41 of the lowest performing schools in the Chapter 1 Program Improvement program. CDE staff view this as a start, but it should be kept in mind that this is only 41 schools out of 1000 in the Alliance and 5000 overall.

The California Alliance for Elementary Education is still very young and its impact is uncertain. The focus is on instruction and curriculum; *It's Elementary* recommends that schools start with one content area (e.g. science) work on that for a few years and then move onto another. There are two rationales for this strategy. One is that the consistency in approaches to learning and teaching among the frameworks will result in a spillover effect: changes in instruction in one content domain will be a catalyst to changes in another. In addition, teachers and schools need more concentrated time to effectively understand, much less incorporate the framework in any single area. While a few respondents viewed the Alliance as glitzy, others regard it as a key strategy for supporting elementary school reform in the state.

The CDE leadership differs over the extent to which the networks have taken hold. Some high level administrators described them as "very fragile." The central idea of the grade level document and the networks is to help schools pull together the various threads of reform into a coherent strategy at the school level. They are, by intent anyway, whole school approaches.

School Improvement Program and Program Quality Review. The other main school-based efforts sponsored by the state involve the School Improvement Program (SIP) and Program Quality Review (PQR). SIP began twenty years ago with a focus on early childhood education; it then incorporated elementary, middle and high schools. In recent years the SIP program and the PQR have been influenced by developments in and lessons from SB 1274 as ell. In fact, both programs in the same division in the CDE and are overseen by the same administrator.

> If it's looking into systems, we do it. Staff development we don't do. What we do is capacity building—looking at schools and districts, which systematically aren't into learning for adults. Schools are antithetical to change and learning for adults. Therefore, staff development efforts alone don't work well because the *organizations* don't value change. The mission of the division is to make learning and change a part of the organization on a day-to-day basis.

In SIP the program is centered on the Program Quality Review, which is a school self study process, supplemented with periodic outside review. Based on the review, schools draw up a concise improvement plan. The PQR has moved from a focus on what teachers do (instruction) to what students do (student work). In this respect, the effort parallels SB 1274. The administrator of the program noted that the feedback from schools on the revision of the PQR has been difficult, but learning to focus on student work is very difficult.

SIP is a district-based program and does not include networks. It is less intensive, less on-going, and because it is focused on subject areas, it is less comprehensive in scope than SB 1274.

State Reform and Capacity Building: Views from the State

Several characteristics and recurring themes of the state reform efforts are worth noting before moving to the district and school data. One of these is the consistency of the vision that emerges from discussions with state level people. While the focus of each of the respondents was specific to his or her area of work and while there were some differences in emphasis, respondents at the state level presented a very common picture of the goals and nature of the reform efforts. This consistency runs through the frameworks and reform documents as well and rests on what has come to be referred to as a "constructivist" model of learning.

Three other themes regarding the nature of the reform efforts emerged from the state interviews. One is the conception of the reform as being primarily a *professional* endeavor. The frameworks, the SMPs, indeed most aspects of the reform have their roots in professionally-based efforts, like those of the Bay Area Writing Project, and there are strong links between the professional associations like the California Mathematics Council and the state reforms. The view of the teacher as a professional is one of the basic principles of the California Alliance for Elementary Education, a view which lies at the heart of professional development and teacher credentialing policy as well. One CDE leader summed up well the sentiments expressed by many:

> The involvement of the profession is going to be crucial if the reform is to have an effect. It's a bootstrapping operation: the profession has to speak with power and authority, and as it is listened to, it speaks with ever greater power and authority. The fact is, the professionals know better what math education should be—this is a *professional domain*.

A second theme was the increasing emphasis on student performance and the use of student work not only as a means for judging the student but also as a tool to improve instruction. This was evident in the revision of the PQR review and in the SB 1274 protocol discussed above, but it was also a theme that ran throughout the state interviews:

> In education, if it's student performance, that's the right end.... You've got to keep asking, 'Is this making a change in classroom teacher behavior and is that resulting in increased student learning?' If you always think about that, then you spend money in the school differently and look at everything you do differently.

Third, many of the interviews stressed the need to develop "learning communities" for both students and adults. One manifestation of these communities were the SMPs, one goal of which is to provide a "professional home" for teachers. There was also discussion of the school as a community of learners and an increasing emphasis on school-based change.

Challenges

State respondents emphasized several key challenges facing the California endeavor.

Leadership. One of these was the development of leadership at all levels. The leadership void left by Honig was a common concern as were the continuing battles over the direction of education policy and funding. There was also considerable emphasis on the importance of developing leadership among the teachers, and the five-fold increase in the number of leading mathematics teachers since the publication of the 1985 framework was described as a major accomplishment. Tied to this was the recurring notion of critical mass, an emphasis that the core of teachers active in and knowledgeable about the reforms was just too low.

> We know what needs to be done; we know from cognitive science—we're just not doing it because it's so complex. These ideas are so different from what's being done now in the California schools. There are 200,000 teachers in California. Very few have had in-depth exposure to curricular change through the SMPs. We don't need everyone, but now it's 2 percent, maybe a little more; we need 10 percent.

In all this concern for leadership, however, there was little attention to the potential role of the district or the need to develop instructional leadership at the district level. The potential ramifications of this are discussed more fully later in this report.

Diversity. Over and over respondents stressed that the reform needed to be for *all* students and acknowledged the incredible challenge posed by California's diverse student population. There has been some movement toward addressing this challenge. For example, the categorical programs like Chapter 1 and bilingual education have historically been separate from the core curricular division and work of the Department, but by account both of categorical staff and those involved in the core program, there have been increasing links made in the past few years. SMPs have also sought to address this need through such efforts as the Spanish summer institute of the Literature Project, the on-going efforts focused on teachers of LEP students in the Writing Project, and the Math Equity project of the California Math Project.

But there continues to be a critical lack of bilingual teachers and according to CDE staff there has not been much progress in providing access to the core for large numbers of LEP students. Also, school based networks like the Alliance, and other capacity building endeavors like the CSLA or SIP, have been criticized for inadequate attention to issues of diversity and the problems of urban district and low achieving schools.

Developing Public Support. Interestingly, this challenge did not come up sharply in the state level interviews until the furor over the tasks in CLAS instigated by the religious right. After the uproar, however, several state leaders pointed to the lack of public involvement and understanding as a major (and potentially disastrous) weakness in the reform.

Barriers to Change

Two main barriers were targeted by state respondents. Inadequate time for teachers to learn, plan, reflect and change was far and away the main issue raised. This was linked to the structure of the school day, but respondents also pointed out that districts and schools often did not make use of the time available. In particular the eight student-free School Improvement days were not used by most districts.

The second barrier was psychological:

"Teachers have too narrow a vision of their own role. It's a psychological fence."

Both barriers came up strongly in the district and school data as well.

District Reform Efforts

District Sample

Selection of district sites for this study was based on two types of criteria; one type concerned the district's approach to reform and the other its demographic characteristics.

First, state level and other informants nominated districts on the basis of their activity in reform and capacity building efforts. We wanted to focus on high involvement districts—or at least districts with high involvement schools—so as to draw lessons from more exemplary practice. We also sought to include some variation in capacity building and reform strategies, though with only two districts there was no hope of representing the broad range of strategies available in a state as large and varied as California. We selected one district (CA1) that had several schools that had been awarded SB 1274 restructuring grants (in fact, 35 percent of this district's teachers and students are in SB 1274 schools). What was particularly appealing about CA1 was its reported desire to use the SB 1274 experience in general, and the protocol in particular, to assist other schools in their reform efforts. We hoped to see in action an attempt to "scale up" a school-by-school reform strategy.

CA2, by contrast, had a long history of involvement in Subject Matter Projects and framework implementation and had several Math Renaissance schools. We had expected in this district to see a more discipline-based reform strategy. What we found after selecting CA2 was that they also had a substantial "home-grown" restructuring effort, which had been initiated by the teachers union and written into the 1989 contract. At the time of data collection, just over one third of the schools in the district were part of the restructuring initiative, at one of the three stages of development. (Stage 1 schools are still developing awareness of restructuring; stage 2 involves experimentation and creating a culture for change; and stage 3 is full-scale restructuring of the learning environment.)

The second basis for site selection was our desire to ensure variation in district size and type. CA1 is a mid-sized district with less than 10,000 students. Located near a larger city, it includes both suburban and rural schools. The student population is primarily non-Hispanic white (55 percent) and Latino (39 percent) with fairly equal (i.e., equally small) percentages of African American and Asian students. Approximately 15 percent are limited English proficient (LEP). In contrast, CA2 is a large urban district, with almost seven times the enrollment of CA1 and much greater ethnic diversity. A majority minority district, CA2 has a non-Hispanic white enrollment of only 14 percent, while 35 percent of its students are Asian (primarily Chinese), 20 percent are Latino and only slightly fewer are African American. The remainder are other non-white. Almost 30 percent of the students are LEP, 30 percent are on free or reduced lunch, and nearly 45 percent are classified EDY (Educationally Disadvantaged Youth). In addition, the district has been operating under a court supervised desegregation plan, in which several schools were completely reorganized and special arrangements made to lower class size and focus professional development efforts on targeted schools.

The staff in both districts, as in California generally, are less ethnically diverse than the students. In CA1, 90 percent of the staff is non-Hispanic white, with 7 percent Hispanic and 3 percent Asian. By all reports, the limited number of bilingual instructional personnel in the district was a major concern, though in one of the study schools the percentage of bilingual staff was quite high. We were unable to obtain data on the average age or length of service of the teaching staff, though most of the teachers we interviewed had less than ten years experience. In CA2, slightly over sixty percent of the certificated staff (which include teachers, administrators, and resource personnel) were non-Hispanic white, while African American and Chinese staff were both at approximately 11 percent and Hispanic staff at about 8 percent. As in the case of CA1, the inadequate numbers of bilingual personnel was of major concern, resulting in the recent recruitment of a large number of teachers hired from abroad. In 1993-94 the data indicated a very stable and experienced staff in CA2, with an average age of nearly 50 and over 18 years of experience in the district. An early retirement program has changed this situation drastically, however, such that this year (1994-95) over one-third of the teaching staff will have been in the profession for two years or less. The sudden influx of new and inexperienced teachers is considered a major capacity-building challenge facing the district, particularly over the next three years.

Comparable and relevant student achievement data are difficult to obtain. Most observers regard CTBS scores as inadequate for assessing student achievement as they are not aligned with the intent or substance of the frameworks. CLAS scores were unavailable until early spring, however, and we were able to obtain them from only one of the two sample districts. CA2 CLAS scores for 1993 have an almost identical level and distribution to those for the state as a whole. Given the high proportion of LEP and disadvantaged students in CA2, this relative showing is probably an indication of the history of reform efforts in the district consistent with the frameworks.

Meanwhile the CTBS data for CA2 are less positive. In both reading comprehension and mathematics applications (the only subtests given by the district), the scores are below the national average (only 1992 scores available). What is particularly disturbing for the district leadership is the disproportionate number of students in the lowest quartile. In the fourth grade, 33.5 percent and 36 percent of the students are in the first quartile in reading and mathematics respectively. By eighth grade, however, these percentages have dropped to 27.3 and 30.7 respectively.

In CA1, we only have the most recent (1994) CTBS data available. On the identical subtests, the percentages in the lowest quartile in reading are slightly larger for both grades than in CA2 (35 percent in fourth grade and 32 percent in eighth), but the mathematics scores are less straight-forward. In the fourth grade, the percentage of students in the lowest quartile in mathematics in CA1 (28 percent) is considerably smaller than for CA2, but by eighth grade the positions are reversed (CA1, 35 percent in lowest quartile). Moreover, in three of the four subtests, CA1 shows a larger percentage of students in the top quartile than CA2. Again the exception is eighth grade math. The pattern is intriguing, but this study does not allow for exploration of possible explanations. One thing is certain, however; both districts have a disproportionately large number of students scoring in the lowest quartile, as compared to national averages.

District Support of Instructional Change

District Culture

Interviews with central office and school level personnel in both districts clearly indicated that district efforts in support of reform must be analyzed in the context of the more general district structure and culture.

CA1, for example, was still recovering from a major fiscal crisis that had left it "practically bankrupt" and had caused the school board to bring in a new superintendent two and a half years before. The crisis had engendered considerable distrust throughout the district.

> For approximately two years they had been on a fast train going straight downhill. There was a psychological sense of helplessness in the district.... The "slash and burn" days went on for almost three years. People began carefully protecting what they had. The attitude was 'I ain't volunteering nothing!' There was publicity the district had mismanaged funds. Things got pretty hot and heavy and then there was a lot of 'circling of the wagons' for protection.

This distrust of the central office and a general fear of change in the schools were recurring themes throughout the interviews, despite the fact that over a third of the teachers and students were in restructuring schools. Rebuilding trust and developing a more common direction were major goals of the new superintendent and his key staff. But so far they had achieved limited success. "There's still some 'wait and see' attitude, but it's much much better."

Respondents characterized the culture of CA2 as one of entrenched bureaucracy and provincialism. The physical and organizational fragmentation of the central office staff into competing turfs was reportedly a product of the leadership of the superintendent during the 1970s and early 1980s, an intentional strategy for maintaining power. Both subsequent superintendents had tried to break down the divisions, but so far with little success. Contributing to the problem is the provincialism of the district. According to one of the top administrators,

> [CA2] is a very inbred district. It's really almost a closed system. A lot of teachers come from [the local universities]. In my elementary department there are folks who were born here, went to school here through K-12, then attended [the local CSU], then came back here as teachers, principals, and finally district administration. But it's changing slowly.

Leadership

At the time of this study, both superintendents were relatively new to their posts and both had been brought in from the outside. The superintendent in CA1 was completing his second year, as was his deputy. Other top leadership had come even more recently, as had many of the school board and the school principals. There was a sense that everyone was "learning the ropes." They were still trying to define the direction for the district, much to the frustration of school personnel. In the words of the deputy, "People are wondering who we are and what we stand for." In the words of more than one teacher, "The district is in a state of flux and they don't have a plan. There has not yet been a lot of leadership from the superintendent."

The superintendent in CA2 had been in leadership a year longer and had more long term staff, but was still a mystery to many both inside the central administration and in the schools. In part this was due to the fact that some of his proposals for change, many of them made with considerable public fanfare, had been followed by lack of information and follow-through so that respondents were unsure whether they had been dropped or were simply proceeding more quietly. Indeed, the two superintendents shared a general lack of visibility in the schools, a marked change from their predecessors who had spent considerable time visiting school sites and responding directly to school-based issues and problems. As one teacher in CA1 put it, "We're doing a lot of great things, but I haven't seen the superintendent or the assistant superintendent. I would say to them, 'If you value us, you will come.'" Thus, while the two leaders also shared an emphasis on team-building and Total Quality Management, their own personal leadership style seemed to undercut their intent.

Restructuring

As indicated above, both districts had major restructuring efforts in progress. In CA1, these were supported through SB 1274 and had been signed off on by the previous superintendent. The current district leadership was verbally supportive of these efforts but was primarily focused on "getting all the arrows pointed in the same direction."

> We want to make sure that the schools are not scattered in 15 different directions. We have three restructuring schools...but there are other schools in the district that are more traditional. The staffs at one vs. the other school are becoming competitive, and there are parental concerns. There needs to be some measure of continuity and uniformity. (Deputy Supt.)

In CA2, according to both district and union report, much of the restructuring effort had thus far been focused on process—site based decision making—and in only a handful of schools had there been focused attention on the overall instructional program.

Curriculum

Both Districts reported that their curricular priorities were determined, or at least highly influenced, by the adoption cycles of the state. Both had recently adopted science materials and were in the process of conducting staff development efforts linked to those adoptions. But in CA1, curricular leadership by the central office did not extend much beyond this level. According to the Deputy, there had been a de-emphasis on curriculum in recent years, a situation he would like to change but which was determined in part by budget cuts and lack of staff.

CA2, by contrast, had a history of curricular involvement, initiated in large part by the previous superintendent, who had been a strong proponent of a common core curriculum based on the state frameworks. The state frameworks were at the center of our discussions with both district and school personnel. The current priorities in CA2 include a major early literacy campaign, which has put $1.2 million into Reading Recovery (which is now in over 40 percent of the elementary schools in the district, at the first grade level) and another $300,000 into another whole language based effort. Both involved intensive cross-site and site-based staff development in an effort to "build a whole culture for early literacy." The Superintendent's goal was to have every child reading at grade level by the end of third grade. Mathematics improvement was another of the five priorities for the district in 1994-95. Although mathematics achievement on CLAS and on CTBS was consistent with state performance and national averages, the desegregated CTBS scores for African Americans showed no year-to-year gains and only minimal gains for others. Attention to mathematics in this year was seen as laying the groundwork for more intensive efforts coincident with adoption of mathematics texts next year. In all curricular and instructional areas, primary attention in the district continues to be placed on improving the performance of students in the bottom quartile.

Professional Development

District CA1. As in the case with curriculum, CA1 does not have a well developed professional development plan or program. District-initiated professional development takes mainly the form of workshops on designated staff development (SIP) days, of which there will be seven in 1994-95. There appears to be a tension between district-determined staff development and more site-based efforts on those days, particularly at the elementary level. At the time of our data collection, teachers at the elementary school were complaining about the district workshops on the new science program, both because they found the workshop to be unproductive and because it took away time that could have been focused on site-based efforts.

District-sponsored staff development, as reported by CA1 leadership, remains at the awareness level. It is funded through a combination of sources: School Improvement funds, special grants, SB 1882 monies (at the secondary level), and through arrangement with textbook publishers. In fact, choice of science program was influenced by the inclusion of publisher sponsored staff development and time as part of the package.

In addition to district sources, however, individual teachers and schools have access to subject matter projects at universities in two neighboring cities (including Writing, Literature, and Mathematics Projects), and the elementary school has an on-going relationship with the faculty at the nearby CSU campus, from which several of the teachers received their teaching credentials. In addition, two of the elementary schools (not the study school) are members of the California Alliance for Elementary Education and participate in professional development activities in conjunction with the Alliance network and its statewide conferences. The study middle school has also been active in the California League of Middle Schools, which has provided an on-going source for professional development for both teaching and administrative staff. The most recent middle school conference, attended by thirty-five staff, focused primarily on curricular issues to the reported benefit of the teachers we interviewed.

District CA2. The professional development context in CA2 differs considerably from that in CA1. In CA2, teachers have only gained access to the state allowed non-instructional staff development (SIP) days in the past two to three years, primarily as a result of the restructuring initiative and the change in district leadership. Only in 1993-94, were all schools allowed to take all eight days (assuming they submitted an approved proposal for how the time would be used). The former superintendent, though in agreement with the importance of professional development, did not believe in decreasing instructional time to support it.

Nonetheless, CA2 has a comparative wealth of professional development opportunities and there has been considerably more central office attention to developing and implementing a district-wide strategy for teacher and (more recently) administrator development.

The sources of professional development in CA2 include district-organized initiatives discussed below, Subject Matter Projects, and several others. The local CSU has housed a site of the California Mathematics project devoted to elementary grade teachers for over a decade and has developed a close working relationship with the district. A nearby site of the California Writing Project has been available to teachers in the area for over two decades, and according to a district survey a few years ago, a third of the district's teachers have been through the writing project either at site-based workshops or in the summer institute. The Deputy believes that this foundation, along with the experience of adopting a literature-based reading series a few years ago, provided a strong basis for the current whole-language early literacy campaign. (This situation, of course, will have changed with the recent large turnover in teaching staff.)

At the middle school level, the district contracted with the local UC campus to provide professional development to teachers in schools targeted by the desegregation plan. The effort, one of several intersegmental programs (ISP) offered by various campuses of the UC, is based primarily on on-going, site-based assistance to individual teachers, departments, and whole schools in the areas of mathematics and English language arts. Threatened with termination in the spring, the program instead has been expanded as part of a district-wide effort to improve middle school education. While consultants from the National Urban Alliance will provide intensive short term workshops on key issues in middle school education, the UC ISP will focus on on-going curriculum development and pedagogical coaching.

In addition, the area is fortunate to have several science museums and other UC-based opportunities which provide extensive professional development opportunities in science and mathematics. Many of these are open to and used by individual teachers, while others are special programs coordinated through the district in conjunction with its efforts in science and math. Finally, as in CA1, CA2 has taken advantage of staff development offers from textbook publishers—particularly Houghton-Mifflin in reading—as part of the text adoption process.

According to central office staff, district sponsored professional development consists of three main types: awareness initiatives designed for broad dissemination as a catalyst for change; more intensive and on-going efforts focused on content and instructional strategies in assessment, curriculum or special problem areas; and finally leadership development efforts to develop the capacity of individuals to play leadership roles in the other two initiatives. By all accounts, district-based professional development opportunities and strategies are the most developed in mathematics and science, due both to the efforts of a committed and creative district coordinator and to the collaboration of university and museum personnel. The recent efforts in science, though not a focus for this study, are worth description as they are providing the model for strategies being developed in mathematics and literacy.

The science strategy is based on coordination of four separate programs into one initiative that includes all three types of professional development mentioned above. At the core are 24 elementary school teacher leaders, who for the past four years have devoted several weeks in the summer and considerable time during the year to learn and do science and science education. The summer institutes focus on the content itself (e.g., geology) and then during the year the group operates in eight triads which collectively service the science education in each of the three teachers' schools, designing presentations or interactive classroom demos, giving them, refining them, giving them again in a second school, and so forth in an on-going iterative process that in based on and responds to conditions in the three schools. This aspect of the work is thus site-based and on-going. In addition, the whole group meets together 5-10 times during the year to discuss the work and consolidate lessons across sites. The science leaders are given other opportunities for leadership development through the local science museum and UC as well as mentor teacher activities and science curriculum development, with the result that these 24 teachers have formed the core for science education in the district.

On a broader level, over 100 other teachers (at least one from each school) have been involved a program sponsored by the local UC which includes summer institutes and follow-up during the year. This group assists in designing and presenting the three professional development days during the year devoted to the new science framework and instructional materials and are point people in their schools for developing the science curriculum. And on the broadest level, all teachers participate in the SIP day in-services focused on science.

The model thus incorporates the three types of professional development initiatives identified by the district. SIP day ins-services provide the awareness level motivation to change. The UC sponsored program is the more intensive but broadly distributed focus on content area, and the leadership program develops the strong core to deepen and carry the work forward over the long term. In addition, the initiatives include both cross-site and site-based activities, attention to learning and doing science as well as to curriculum development and pedagogy.

Similar models are being developed for the early literacy campaign and mathematics education. In the case of mathematics, there is a strong base to build from because of the work of the Mathematics Project, the networks built by the Urban Math Collaborative, projects in open-ended mathematics assessment, work with the replacement units, etc. According to the district coordinator, they have been building capacity in mathematics for the past eight years (since the 1985 framework), but the model in science will advance this work, particularly in terms of site-based activities and leadership development. Overall, the movement seems to be toward more site-based and on-going arrangements in all the content-centered professional development in the district.

An area of overall weakness has been the professional development of principals and other administrators. There were mixed reviews of the CSLA, and it was not clear the extent of its influence in the district although we did speak with administrators who had both participated in and taught CSLA workshops. One criticism was that it was overly structured and controlled. But the main concerns were that its programs were not geared to urban districts with very diverse student populations. Similar observations were made about the California League of Middle Schools, and while few concerns were voiced about the California Alliance for Elementary Education, there is not much involvement in this network either. It is difficult to judge, however, the extent to which these observations reflect weaknesses in the state networks and initiatives vs. the extent to which they reflect the admitted provincialism of CA2. There have developed recently more "home-grown" development activities for principals (including on-going study groups), particularly at the middle school level.

The funding for professional development in the district comes from many sources in CA2 and it did in CA1: SIP, SB 1882, Eisenhower and Mentor Teacher funds. In addition, particular schools get some funding from Project 2061, SB 1274 grants, and desegregation monies. There have also been numerous foundation grants—the Ford Foundation, for example, was the primary sponsor of the Urban Math Collaborative for five years, and at the time of data collection, the district was preparing a proposal for the Rockefeller professional development grants.

Teacher and School Reform Activities

School Context

We selected two schools in each district, one elementary and one middle school, based on recommendations from district personnel. The two schools in CA1 were both SB 1274 grantees, as was our intention when we chose the district. Both schools have a history of reform efforts, but the restructuring initiative has shaped and advanced those efforts considerably. In both schools the reform efforts were described as "a mile wide and an inch deep." With 65 percent Hispanic enrollment, the elementary school has a two-way developmental Spanish bilingual strand and an English language development strand. It is divided into multi-age classrooms (what would otherwise be grades 1-3 and 4-6), which work together in family teams. A core of the teachers received their credentials in bilingual education from the local CSU, which emphasized the role of teacher as change agent and maintains an on-going mentor relationship with the school. The "middle school" was actually a junior high which was using the SB 1274 grant to convert the seventh and eighth grades to a middle school model, leaving the ninth grade as yet untouched. The change had been pushed by the principal and former vice-principal, but after two years, a majority of the staff was reportedly generally supportive.

In CA2, the middle school had been closed and reopened with new teachers and students seven years earlier as part of the desegregation plan. Students apply to attend the school but selection is based purely on lottery, so all achievement and economic levels are represented, and racial balance is maintained. The elementary school is actually a K-8 public alternative school with two decades of teacher and parental control. Both CA2 schools were at Stage 3 in the district restructuring initiative, and the middle school had also received a SB 1274 grant.

Despite differing district contexts, the findings across schools in this study were strikingly similar.

Curriculum

Curriculum as Central Reform Focus

In all four schools, curriculum and instruction were at the center of the reform efforts, and there was lots of curriculum development going on. All schools had developed holistic outcomes for students, and each of the teachers interviewed was involved in curriculum development at least in his or her family if not across families and grades for the whole school. The one possible exception to this rule appeared to be the CA1 middle school, where there was considerable emphasis on process issues in restructuring. On closer examination, however, it was the site administrator who focused on process, while the teachers centered their remarks on the content of their instruction and strategies for improving content and instruction.

Influence of Frameworks

The state curriculum frameworks (along with CLAS) were a visible and major influence on the curriculum and instruction in the four schools—either directly or indirectly.

In CA2 the influence was quite direct. The department meetings and articulation plans in the English and mathematics departments of the middle school mapped their efforts onto the framework—or even more closely onto the curricular strands assessed by CLAS.

> We took the district scope and sequence and the framework and took from those what we needed to address in reading, writing, oral expression, mechanics. We asked what do sixth grade teachers expect students to know, what do seventh grade teachers expect students to know, what do eighth grade teachers expect students to know.... We broke down the eight types of writing and decided which to focus on in which grades.

In the elementary school, the frameworks were used as a guide when the school moved from occasional interdisciplinary projects based on teacher interest and background to a project-based curriculum for the entire school. The mathematics replacement units developed by the state formed the core of several of these extended projects.

In CA1, the influence of the frameworks at the school level varied; it appeared generally less direct and came largely through professional development activities of the staff. The subject matter projects and College Preparatory Math program, which had clearly influenced the middle school teachers' instruction, for example, were closely linked to the frameworks. In the elementary school, only one teacher spoke directly about the frameworks and their central influence on her teaching; the other teachers interviewed talked about instructional strategies and general approaches that were consistent with the frameworks but said comparatively little about curricular content (except to express their irritation at what they perceived to be district attempts to exert curricular control, as in the science adoption). These teachers seemed to be primarily influenced by their interaction with professors at the CSU education department working with the school, whose focus was primarily on bilingual education and multiculturalism as central themes and on "student centered" instruction.

In all schools, the general instructional approaches appeared to be highly consistent with the frameworks and reform documents from the state. Emphasis was on instruction that was meaning centered, including literature-based reading instruction and process writing. This orientation was less obvious in the middle schools, particularly in mathematics where all teachers expressed a greater concern for skills development than they found in the mathematics framework. The following was a typical sentiment of the middle school mathematics teachers:

> The new framework is a big change from what we had before. The change is coming about slowly. The framework does have a guiding force, and all the folks who do inservices with us base what they do on the frameworks.... It's good. Of course it's always going to be an ideal document; then you've got the realities of the school and class. But I'm fairly traditional in my instruction; I like my kids to have skills and these are very de-emphasized in the framework.

Nonetheless, all the teachers seemed to see the framework as "a good foundation" and placed considerable emphasis in their instruction on problem-solving and mathematics applications as outlined in the strands of the framework.

Disciplinary vs. Interdisciplinary Approaches

All four schools were struggling to integrate the curriculum, in varying ways and to varying extents.

Both CA2 schools were incorporating Project 2061 project-based learning models to different degrees. The most extensive integration of content was at the CA2 elementary school, which was moving from a 50 percent project-based curriculum in 1993-94 to all project-based instruction this year. The students chose their projects, much as one might choose a course in college. Project offerings incorporated the 2061 benchmarks, the NCTM standards, and the California frameworks in English language arts and social studies. They were interdisciplinary and multi-age, and culminated in a major product, which the students and teacher judged according to collectively established rubrics and standards. In 1994-95, the projects were to be supplemented by additional mathematics and reading skills instruction to meet individual student needs. Teachers in this school designed the projects and the overall curriculum themselves, a monumental task especially with almost no extra resources to do it. The middle school in the district also incorporated interdisciplinary projects, but on a smaller and less frequent scale. The four teachers in each family designed and taught the projects over a two to three week period, keeping the same group of students throughout that time.

In all four schools, teachers discussed the tension between disciplinary and interdisciplinary approaches and goals. As might be expected, this came up particularly in the middle schools, as elementary teachers are more accustomed to integrated content. In the middle schools, the tension was often expressed in terms of the relative emphasis on (interdisciplinary) families and (disciplinary) departments. In one middle school (CA2) the family structure co-existed with and complemented the departments, with day-to-day planning being the purview of the families and more long-range curriculum development and professional development being carried out by the departments. The other middle school had disbanded the departments when the villages were formed, in part because the principal viewed the departments as hold-over from the old junior high model. The teachers, however, all spoke to a felt need to reinstate the department organization for content-based support in addition to the more holistic emphasis of the villages.

Assessment

Every teacher in the study who had had direct contact with CLAS—either in administering or scoring the assessment—was pleased with the direction it was taking, though they also raised criticisms about the lack of communication and the scoring. The following were typical of the respondents' comments:

> The CLAS test is project-oriented. The kids need to know more than computation. It's a *demonstration* of skills rather than a bubble in. But it seems hypocritical because we have the CLAS and then a week later have the CTBS. The CLAS test is a truer reflection of what the curriculum should be, but there are no individual scores, so it doesn't have a lot of credibility. The test is ahead of its time in math. It came out last year at the same time as the framework. (CA1)

> The CLAS test is a way of getting people to do more cooperative work, to teach in specific ways. With the CTBS, teachers taught to the test. They used dittos and nonsensical things that did not develop critical thinking.... Two years ago we piloted the CLAS. We already had cooperative learning and people were moving away from dittos. Our students did well because they were used to that structure. We focus on the writing types in CLAS, so the model was not a shock to them.... There are some glitches but they are not the ones people are pointing out. I think there's a problem with having students do a final paper (for the writing sample) without going through the process—but if you did that, the test would be interminable. (CA2)

> I like the CLAS, It tests the students' understanding well. But when they only grade it from 1 to 4, how much information can you really get from that to improve instruction? (CA2)
>
> CLAS is a good way to assess students, but it's very controversial. Some parents felt that the state is holding out on them. The test was revised from last year. It's asking students to relate more, to comprehend more, and this is good. (CA1)
>
> I gave CLAS this year. Testing does push the curriculum. CLAS is a super test. With the math there was a language problem, but we can deal with that. It should be read to them, or a translation. But that's not a content issue.... In CLAS you're asked to explain your thinking and reasoning. But we're in trouble with the way we market things, the way we let parents know things. (CA1)

It would be interesting to go back to these teachers to get their response to the demise of the state assessment.

Several of the schools are working on other forms of assessments as well. The projects in CA2, especially when scored using rubrics and standards, reflect curriculum embedded performance assessments at the school level. In addition, several of the schools were working on developing portfolio assessment and at least two were revamping their grading and report card systems to coincide with the school-determined student outcomes. The sentiment that assessment should be based on the curriculum and instructional approaches of the frameworks and the schools was universal in this sample of teachers.

School Organization

As described above, all schools in this sample were restructuring. Three of the four schools were essentially run by the teachers. In the CA1 middle school, the principal had played and continued to play a very strong role in pushing the restructuring initiative, but by all accounts the school now had a "critical mass" of teachers in support of the efforts. In all schools teachers reported that they were largely in control of the curricular and instructional decisions. They spoke of themselves as professionals and often participated in professional activities outside the school, as in the case of the middle school teacher who was on the governing board of PACE or the teachers at the elementary school who were core participants in national Project 2061 development efforts.

All the teachers spoke of the links between structure and curriculum, particularly as structure allowed the opportunity for collaboration and reflection on their work. The two schools in CA2 had the advantage of previous years of unofficial restructuring the school organization so that when the district restructuring initiative was introduced, they moved immediately into the stage 3 focus on curriculum and instruction. However, in all four schools, teachers indicated that the particular structure (form) needed to be determined by the instructional goals (content), not the other way around.

One potential problem with the family structure was alluded to by teachers in all three schools who had incorporated that form of organization; this was the tendency to become narrowly focussed on the family and lose perspective on the school program as a whole. There were also some occasional tensions among the families, particular in CA1 between the language development and bilingual strands (in the elementary school) or the bilingual and regular strand (in the middle school). These tensions and narrowness of focus have the potential of closing off opportunities for collaboration and learning among teachers in the school.

Teacher Capacity

Individual Teacher Capacity

When thinking about the level of teacher capacity in the study schools, it's important to keep in mind that these were far from typical schools so the ability of individuals in them to carry out the reforms in mathematics and language arts is likely to be considerably higher than in other schools in the district. Indeed, this observation was made by both school and district staff in both CA1 and CA2.

If one thinks about capacity in terms of teacher knowledge, capacity among the teachers in the study varied among the schools and between the districts. In CA2, where schools and teachers had been involved in reform efforts and curricular change for a number of years, it appears rather high comparatively. Some teachers in the study were heavily involved in national reform efforts (e.g., PACE at Harvard, Project 2061). Others were among the science leaders in the city, had participated on adoption committees in various subject areas, had conducted professional development activities around the 1985 mathematics framework or the English language arts or history frameworks. One African American teacher who had been dissuaded from mathematics in both high school and college, described her learning experiences over the past ten years:

> I've had a wealth of inservices; I've gone to a lot and I've given a lot.... I've been through EQUALS and was in the first Math Leadership Program ten years ago. I also did Family Math and some Marilyn Burns institutes. I've taken science inservices too, but in science my main inspiration comes from the staff.... I haven't done as much professional development in reading and writing. Well, I did do the Writing Project twice—one time through the district and the other time in the summer at Cal. I was in the partnership program with inner city teachers.... I've been involved in a lot of district adoption committees—for the math text and the social studies; committees on implementing the math curriculum twice (the old framework and the new framework; and have given inservices on the math framework in the district...

This teacher, though clearly an exception in the district as a whole, was not a-typical of the teachers in the study schools in CA2. All but one of these teachers (and that one was new to the state) had a high level of familiarity with the content of the frameworks, though this study provided no real opportunity to determine their substantive understanding. For the most part, their reported instructional practice seemed consistent with the approach of the frameworks, with the exception in middle school mathematics noted earlier.

Teachers in CA1 tended to be newer to the profession, than CA2 teachers like the one quoted above, though some had taught for a number of years. Most were at earlier stages in the reform, but the ones we interviewed were quite active, and on what appeared to be steep learning curves. Teachers in the bilingual immersion school are articulate about language acquisition and multiculturalism, but are also becoming increasingly involved in subject-based curricular change, first in science but then moving to other areas.

If one considers disposition to change and learn as part of capacity, then all teachers in this study were very high in capacity—with the possible exception of one middle school mathematics teacher, who in fact left the school at the end of the year to teach advanced placement calculus at the high school.

Interaction of Teacher and School Capacity

There was strong sentiment among these teachers that their own ability to carry out instructional changes in mathematics and English language arts was influenced by the organizational context in which they worked. That is, the capacity of the individuals interacted with and was enhanced by the capacity of the school as a unit—including its organizational structure, the history of collaboration, the presence of a common vision. Teachers in every site spoke of the importance of having a critical mass of teachers who were open to change and focused on instructional improvement.

New Teachers

There was considerable concern about the ability of new teachers to fit in to a school that was well on the road to curriculum reform. This was particularly true in the CA2 schools where the staff had been very stable for the previous seven to ten years, where new teachers had experienced difficulty adapting, and where they were facing considerable turnover in the coming year (particularly at the middle school). The articulation plans at the middle school were designed in part to address this concern by giving new teachers a framework to fit into. The elementary school, whose curriculum was a much more radical departure from the norm, had not developed an effective strategy for incorporating new teachers and had lost a few as a result.

Factors Contributing to Teacher Learning

Despite the differences in school and district context, teacher perspectives on their learning and on professional development were generally very consistent. Several key themes emerged.

Collaboration

All teachers emphasized the importance of talking and collaborating with other teachers, on and off the site, as a critical component of their learning. And all took advantage of individual and collective professional development opportunities. Moreover, all associated with on-going communities of learners, though to varying degrees. An interesting pattern in these schools was that while teachers participated in professional associations and networks outside the school, it was their school-based colleagues who formed their primary learning community.

Effective Professional Development

All teachers in this study had participated in what they considered to be effective professional development programs. Although the format differed depending on the program, the grade level, and the discipline, a common model of effective professional development emerged from these interviews. According to the respondents, the features included the following:

- The teachers were treated as professionals. Often the content was teacher determined. Stipends and release time were viewed as indications that these activities were *professional* in nature.

- The professional development was engaging and intellectually challenging, and often had the participants *doing* science, *doing* math, *reading* literature, or *writing* compositions. The instruction was thus hands-on, and in some cases inquiry-based.

- The content and activities were relevant to the students in the teachers' own classrooms and schools and they had opportunity to work with teachers who had similar instructional contexts as their own.

- The professional development was on-going, with intensive workshops or institutes followed by involvement in networks, on-going coaching at the school site, and so forth.

- There were ample opportunities for collaboration with other teachers on specific projects or activities. Considered especially helpful were those cases in which teachers collaborated in the design of curriculum or other projects, tried it out, and collectively reflected on the outcome.

Critical Mass

Teachers, like the district and state personnel we interviewed, emphasized the importance of having a critical mass of teachers and a school culture committed to and supportive of change. This not only made initial change more likely, but resulted in opportunities for continuous and collaborative learning at the school site. Respondents observed that with a critical mass of reform-minded teachers at the school, teachers who were not supportive of the direction tended to move on to other settings, thereby freeing those left to further build their ranks and consolidate the reforms.

On-going, Outside Support at the School Site

Each of the schools in the sample had on-going and regular, site-based assistance from a group or program outside the school. In CA1, professors from the CSU maintained consistent and fairly exclusive contact with the elementary school, and one faculty member provided regular monthly or bi-weekly sessions with the staff on-site. The middle school received site-based assistance from both the California League of Middle Schools and their contact person for the SB 1274 grant and protocol. In CA1, assistance at the elementary school came primarily from Project 2061, both in the form of the local and national network of 2061 sites and in the form of a consultant who visited the site periodically to work with staff on documentation of instruction and student work. The middle school in this district had had weekly assistance from the ISP of the UC for a number of years. This assistance dealt with curriculum development in mathematics and English language arts, performance assessment (both curriculum embedded and on-demand), and pedagogical strategies and modeling of lessons linked to the frameworks.

Such assistance both brought in new ideas and provided opportunities for the teachers at the site to reflect collectively on their work. The common viewpoint was that such assistance had been crucial in the progress made to date.

Consistency among and with the Frameworks

Teachers in this study also observed that the consistency among the frameworks in the view of learning and teaching helped the learning process of the teachers and the progress of the reform efforts.

> The type of inservices and replacement units, the Writing Project and many subsequent programs have turned my teaching around..It takes a long time before you can really change what you do. I used to have math and reading groups by achievement level. Only in the last few years have I changed that. The Writing Project and the Literature Project helped me get rid of groups. And through EQUALS I dropped the math groups. And the replacement units allow you to teach to the whole class. (CA2)

> [The summer academy in science] was connected to the framework, but mostly we worked on critical thinking skills.... Constructivism is more a philosophy—how you want to proceed with any activity in science.... And it has affected me in math too.

> And then you could apply it to history and social studies by beginning with where students are and what they understand and going from there.... It's changed the way we do things. (CA1)

Other Avenues for Teacher Learning

Teachers in this study observed that much of their learning came not from professional development *per se* but from a number of other activities including the use of replacement units in math, the scoring of student essays or practice open-ended mathematics assessments, deliberations about textbook adoption and so forth. Because these activities were linked to common learning objectives, they provided opportunities for teachers to better understand those objectives and to receive additional reinforcement in the direction of both curriculum and instruction.

Continuing Teacher Needs

Time

The universal response when teachers (or administrators) were asked what was needed for the instructional reform efforts to be successful was TIME. Three types of time were discussed, two of which involve reallocation of resources and the third an altered conception of the change process.

The first need for time is time at the school site to collaborate with colleagues, plan, develop curriculum, and reflect on practice. The schools in CA1 had developed strategies for "banking time"—running longer on four days of the week and having a shorter instructional day on the fifth, which could be used for school-wide planning and professional development activities. Through block scheduling and the use of electives, the middle schools in both districts also had structured common planning periods for staff in each family to meet to coordinate instruction. Respondents indicated that such strategies were helpful but insufficient, given the complexity of the changes being sought. Moreover, elementary school teachers complained that they were not allocated preparation period as were middle school teachers even though they generally had more varied preparation to do because they did not repeat classes the way middle school teachers often did. To the extent possible, schools also used the non-instructional SIP days for site-based planning, but in both districts some of these days were taken up with district mandated inservices and thus unavailable for site level work. Funds from SB 1274 grants and desegregation (CA2) were also used to sponsor time for both site-based and off site professional development.

The second need for time is for off-site professional development and professional activities. Here the issue is sponsored release time and stipends during the school year, and workshop fees and stipends for summer institutes. These teachers expressed considerable willingness to spend time in the summer to attend workshops and develop instructional materials, but resented expectations that this would be uncompensated time.

As important as allocated time for learning and development activities, was teachers' emphasis on the length of time needed for change. This was especially stressed by teachers in CA2, who had been focused on school-site change for a number of years.

Finally, respondents expressed concern about the tenuousness of the reform efforts if the needed time was not made available. Several teachers talked about their own or other staff members' feelings of "burn out," and substantial turnover (mainly in the form of leaves) in the CA2 middle school was attributed to the long hours of intense, dedicated work over a period of six or seven years simply wearing people out. One family was to lose every single teacher for the 1994-95 school year.

Teacher Commitment and Confidence

While the emphasis on time focuses on factors outside the teacher, the almost equally strong emphasis on teacher commitment focuses on factors internal to each teacher. Respondents used such phrases as: "We need to be ruthless with ourselves"; "committed to change"; "need to have fire in the belly." Of course, allocation of time and teacher commitment are not disconnected, for exhaustion and burnout tends to erode commitment in the long run.

Closely linked with the notion of commitment was that of accountability. Several teachers in this study expressed the view that teachers should be held accountable for progress in student learning, and even more targeted the unions as standing in the way of change. In the words of one middle school teacher in CA2:

> We need to strive to get on top of the union. If people don't work, they should be out. I don't believe in keeping mediocre teachers—they are affecting thousands of children! The unions shouldn't have that much say about who can get fired. It's horrible what it takes to get some very mediocre people out.

This same teacher went on to talk about the other side of accountability mechanisms—rewards for extra effort and for excellence. These sentiments were echoed by even more teachers in the study:

> I also think people should be compensated for excellence—for doing things over and beyond. This is a way of validating folks' work and treating them as professionals.

Resources

A third major need identified by teachers was that of resources. This was an integral part of capacity to carry out and deepen the reforms. In particular, teachers targeted more monies at the school site for professional development (both to sponsor time and to pay consultants). Nearly everyone identified the need for curriculum and instructional materials that are in line with the frameworks. Especially problematic were materials for limited English proficient students, particularly in the native languages of the children, and better ways to assess student learning. Too much teacher time had to be devoted to materials development because there was so little available that was appropriate to the reform goals. Teachers in the CA2 elementary school also targeted school facilities as a need, an unsurprising sentiment given that they did not even have a separate library or office for the site administrator, much less computer lab. Similarly, middle school teachers in this same district did not have access to computer technology for their students. And all respondents noted the difficulties created by the large class size in California. Several teachers had classes of up to 37 students, including large numbers of LEP and special needs kids. In contrast, the middle school in district B had received monies through desegregation to reduce class size to 25, to which the administration and teachers alike attributed much of their success.

A Final Note on Issues to Explore

Issues and questions for the cross case analysis of the reform efforts in these three states have in large part been identified in the original proposal and revised research plan. Important among the tasks will be to develop an overall analytic frame for understanding systemic capacity and capacity building in support of instructional improvement. To this end, the analysis should explore the needs for and models of professional development emerging from the three states and the different levels of the system. To what extent do these models reinforce or contradict one another?

Closely tied to this general task are two more specific issues that I believe are significant in California efforts to develop the needed capacity for reform and I would be interested in exploring in the context of other states' strategies.

The first of these is the relationship between individual and organizational capacity and capacity building. This refers in part to the interdependence of the individual and the organization suggested in many ways by the data from this study—that is, the way in which organizational capacity can enhance (or inhibit) the individual's ability to use the knowledge and resources available to him and the reciprocal contribution that the individual makes to the overall capacity of the organization and its other members. Emphasis on such matters as critical mass and structural arrangements are examples of this.

In addition, however, the interconnection of the individual and the organization raises the issue of locus of reform in general, and more specifically of what it means to develop teacher leaders. What are effective strategies for developing teacher leadership and in what ways should teachers be encouraged to use their leadership skills? An interesting tension emerged along these lines between district administrators and site directors of the Subject Matter Projects, with the SMPs trying to protect teachers against misuse by their own districts, and districts crying out in frustration because they are unable even to obtain a list of district participants in the projects so that they could incorporate those teachers into professional development plans for the district. One of the SMP directors discussed this issue in terms of a debate that is emerging within the subject matter projects themselves:

> There is a debate about this in the projects now. The argument is that teachers need to have a professional home outside of the schools because the schools are not that—you don't have the time to reflect and think and talk. Some project people say that maybe this is all we're about, creating this professional home outside. I would agree that what was powerful for me was that professional home; yes, that was the base—the teachers, the dialogue, and the information. But what was equally as strong was that I was able to come back and have an impact on my school and my district. The empowerment of being able to do something, that's really what it's about for all of us: what can we do for our kids, our community, our school? That's the leadership part. That's tying the strings together.

In light of this, it is interesting to note that in each of the schools in the California sample, teachers had opportunities to connect with learning communities through networks and professional associations outside the school, but their focus was on improving the school itself. The question is, to what extent is the identification of the school as the primary learning community an integral aspect of successful school change, and what is the desirable balance between professional focus outside the school or district and professional focus on changing things inside? And finally, what strategies and structures at the state and district levels can help foster that desirable balance?

The second additional area I would like to see explored in the cross case analysis is the role of the local district in building capacity and supporting teacher and school change. In California, the district seems to be both literally and figuratively "caught in the middle"—with potentially disastrous consequences for the efforts as a whole. The neglect of the district role in the state's strategy was apparent in several ways. Form the state perspective, districts hardly ever entered into the picture. They rarely came up in the interviews, few state level people knew much about what was going on in individual districts, and many of the reform efforts either by-passed the district and went straight to the school or focused on a more manageable number of regions in the state. The use of regional structures makes sense given the size and diversity of the California system. However, respondents reported considerable unevenness among the regions, and there appeared to be little if any assistance from the state in developing effective regional strategies for working with districts or for building district organizations. There also seemed to be no clear model for what a potentially useful district role might be.

Meanwhile from the district perspective, district administrators reported being left out of the game. On the one hand, the SB 1274 restructuring grant proposals required sign off by the district, but the emphasis, on the other hand, has been almost entirely site-based. As a result, district leaders like those in CA1 tend to want to control the restructuring efforts, thus becoming a potential break on change and engendering resentment and resistance at the school site. In addition, leaders in both districts, but particularly in CA2, argued that without attention to and cooperation with the districts, resources could not be used in the most rational ways. Left to their own, it was difficult to figure out how best to use the lessons from the restructuring sites to help other schools in the district. Teachers who had gone through subject matter projects could not be incorporated effectively into district strategies, as indicated above, and networks such as the middle schools network and the California Alliance for Elementary Education could not be disseminated as effectively.

The result, from the perspective of the schools, was that "the district really does get in the way." The exception to this perception occurred in CA2, where the district had developed a more coherent strategy for brokering professional development and support in certain areas, like science and to a lesser extent, mathematics. Such brokering and coordination of learning opportunities may be a central element of a successful model for local district leadership.

Chapter 2

Systemic Reform in Michigan

Margaret E. Goertz

State Reform Efforts

Context for Reform

Demographic Context

Michigan educates 1.6 million students in 561 socially, economically and geographically diverse school districts. While the Detroit Public Schools educate 170,000 students, school districts in Northern Michigan and the Upper Peninsula (UP) serve rurally-isolated communities. One school district in the UP is physically the size of the state of Rhode Island. Statewide, the student body is 78 percent White, 17 percent African-American and 2 percent Hispanic. Minority students are concentrated in the state's largest cities, however. The degree attainment of the adult population in Michigan is below the national average, but Michigan students currently show a higher graduation rate (96 percent vs. 94 percent) and lower dropout rate (9.9 percent vs. 12.0 percent) than their peers in other states.

Fourth grade students in Michigan scored at or slightly above the national average on the 1992 NAEP reading and mathematics assessments, and Michigan eighth grade students scored above the national average on the eighth grade mathematics assessment. There were slight differences by gender, with boys scoring slightly higher than girls in both grades, but significant racial/ethnic disparities in mathematics. While 28 percent of White fourth graders scored below the basic achievement level in mathematics in 1992, 80 percent of African-American fourth graders were at this level. In eighth grade, 25 percent of White eighth graders and 78 percent of African-American eighth graders scored below the basic level. Disparities were similar in fourth grade reading, where 32 percent of the White students and 78 percent of the African-American students scored below the basic level.

Data from the state assessment, Michigan Educational Assessment Program (MEAP), paint a gloomier portrait (MSBE, 1993). Only one-third of fourth (36 percent) and seventh (32 percent) graders achieved satisfactory performance on the new MEAP mathematics test in the fall of 1991. The figure was 19 percent for tenth grade students. Performance on the 1991 MEAP reading test was similar for fourth and seventh grade (35 percent and 30 percent, respectively), but higher for tenth grade students (39 percent). While performance on the MEAP assessment had improved by 1992-93, there was still room left for improvement. Only 42 percent of fourth graders, 35 percent of seventh graders and 23 percent of tenth graders meet the satisfactory criterion (scoring 75 percent or better on the test) in mathematics. In reading, there was a slight increase in the percent of seventh grade students having a satisfactory score on the 1992 MEAP, but no change among tenth graders.

Political and Fiscal Context.

The major player in the push for finance reform and increased accountability has been the state's Republican Governor, John Engler. His policy priorities have been to lower the state's reliance on local property taxes, to reduce the power of public school teachers, the State Board of Education and the Michigan Department of Education (MDE), and to expand the role of the private sector in education through vouchers and charters. This agenda has led educators to sport buttons pronouncing: "Governor Engler Hates Me." He supported legislation that limits the bargaining power of teachers, and has attacked the Michigan Education Association's widespread and highly profitable health insurance program, MESA. While the Governor has not succeeded in eliminating the State Board of Education (this requires a constitutional amendment), he has cut the size of the Michigan Department of Education, leaving it about 95 percent federally-funded.[4] The Governor did not succeed in getting a voucher amendment on the ballot in 1994, and his proposals for charter schools were watered down by the legislature in HB 336.

Governor Engler, however, was successful in crafting a major overhaul of the state's school funding system, shifting a major portion of funding for elementary and secondary education from the local property tax to the state. The state share of funding increased from 45 percent to approximately 80 percent in 1994-95. The new school funding formula, while falling considerably short of expenditure equity, focuses new state dollars on the lowest spending districts in the state, at the same time it tries to achieve greater taxpayer equity.[5] The state share is financed by a two-cent increase in the state sales tax, a six-mill state property tax on all property, and increases in cigarette taxes and the real estate transfer tax. Local communities can levy up to 18 mills on non-homestead property and those districts spending above the $6500 maximum foundation amount can levy voter-approved "hold harmless" mills on their residential property. All other districts will have no local tax on residential property, unless they ask their voters to approve enhancement mills (up to a maximum of 3 mills through the 1996-97 school year). Intermediate school districts, a major source of professional development to many school districts, will have their millage rates for vocational and special education frozen at 1993 levels.

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[4] This high percentage may reflect the MDE's administration of two large federally-funded programs: disability determination and vocational rehabilitation. In addition, the Department administers the federal student loan program for post-secondary education (GAO, 1994).

[5] Under the 1994-95 appropriations law (Public Act 336 of 1993), every district is guaranteed a per pupil foundation of $4200 to $6660 per pupil, depending on their 1993-94 level of spending (including the cost of teacher pensions and social security which had previously been paid directly by the state). Districts spending above $6660 can maintain their higher level of spending with voter approval (and increased local taxes). The plan basically gives double-digit, per pupil increases to low spending districts and less-than-inflationary increases to high-spending districts in the first year. The percentage of students residing in districts spending less than $4000 per pupil will drop from 27 percent to 13 percent. The major beneficiaries of this foundation plan are districts located primarily in rural areas with operational levy rates less than the state average of 34 mills.

The legislature is also an major actor in education policymaking in Michigan. Although it has traditionally been concerned mostly with fiscal matters, it has become increasingly involved in education reform issues, supporting the Governor's call for greater accountability and initiating its own policies for student assessment. Both the Governor and legislature have responded to a growing involvement by the business community in education. The Business Round Table is active in the state and a member of a new coalition, the Michigan Business Leaders for Education Excellence (MBLEE). This group, which includes the state Chamber of Commerce, corporate sponsors, and the University of Michigan, has adopted the national Business Round Table goals, done a gap analysis to determine needs, and set 12 goals to work on. The business community, led by Alfred Taubman (a businessman with real estate interests in Michigan), has created and funded the Michigan Partnership for New Education, housed at Michigan State University (MSU). The Partnership is a non-profit corporation established in 1990 as a collaboration among Michigan business, education and government "to modernize teaching and learning in a modern world." It receives state as well as private funding and is viewed by the Governor as an alternative source of support for school districts.

The Superintendent of Public Instruction (SPI), who is appointed, and State Board of Education (SBE), which is elected, historically have played a limited role in developing education policy. The role of the SBE changed, however, after the November 1994 elections. A three-person slate of conservative Republicans was elected to the Board, changing both its substantive focus and involvement in the policy arena. The new Board majority supports Governor Engler's choice and charter school agenda, and is pushing for a major revision of the state's School Code that would deregulate the state education system and facilitate the creation and governance of charter schools. The SBE will be assisted in its activities by a new State Board of Education office located in the MDE. The staff of this office will report directly to the State Board of Education.

State Strategy for Systemic Reform

Michigan's strategy for reforming education reflects a constant tension between the state's tradition of strong local control and the press for higher standards and accountability from the state's business community. The call for education reform in Michigan has been driven by its steady loss of high- paying manufacturing jobs, especially in the automotive industry. Financial support for schools is linked to the economic cycles—remaining stagnant or declining in times of recession, and growing in times of economic recovery. The new funding system, which shifts most responsibility for revenue-raising to the state level, will be tied even more closely to changes in state income.

Michigan's education reform efforts can be categorized as "standards-driven" reform that has evolved from a set of minimum standards in reading and mathematics embodied in a low stakes assessment system to the specification of more ambitious standards embodied in a core curriculum and linked to student assessments, school and school district accountability and standards for professional development. There are three key factors that underlie Michigan's incremental path to systemic reform: (1) a push from the education profession to redirect content standards away from basic skills to standards that incorporate new directions in the teaching of mathematics, science and language arts; (2) a simultaneous push by the governor and legislature to make education policy more prescriptive and to make the education community more accountable for its actions; and (3) the historical use of organizations outside the state department of education to communicate and support reform efforts.

The relatively limited capacity of Michigan's Department of Education has led that agency historically to turn to the state's professional education community for assistance in the design and implementation of state policy. This has enabled Michigan to keep its state standards current with the new directions in the teaching of reading, mathematics and science. Michigan's Essential Goals and Objectives in mathematics and reading were first developed in the 1970s as a set of minimum performance objectives for the state's assessment program, the Michigan Education Assessment Program (MEAP). The Essential Goals and Objectives have been updated periodically to reflect national changes in the teaching of reading and mathematics. The current reading objectives, adopted in 1986, were developed jointly with the Michigan Reading Association (MRA). The state objectives reflect the new vision of reading that was emerging from the professional community at that time, one that recognizes comprehension as the ultimate goal of reading and emphasizes the interactive, constructivist and dynamic nature of the reading process. The Essential Goals and Objectives in mathematics were revised in 1988, under contract with the Michigan Council of Teachers of Mathematics (MCTM) and incorporate the NCTM standards. The reading and mathematics standards are being reviewed and revised, with the involvement of MRA and MCTM, as the state develops curriculum frameworks and a new high school proficiency test.

While the education profession in Michigan plays a major role in defining the *content* of the state's standards and assessments, those outside the profession determine which *strategies* (e.g., curriculum standards, assessment and/or accountability mechanisms) should be used to reform education. For two decades, Michigan used a low stakes assessment, based on the Essential Goals and Objectives, to communicate content standards and to encourage changes in local curriculum. This approach of "friendly persuasion" fit the state's strong tradition of local control, but did not produce the type of work force Michigan businesses needed. Responding to calls from the business community and the governor for a better-educated work force and greater accountability in education, the legislature enacted increasingly prescriptive laws, first calling for voluntary enactment of a state model core curriculum (PA 25 of 1990) and public reporting of test scores, and then requiring districts to develop a core curriculum in mathematics, science, social studies and communication arts by 1997 (PA 335 of 1993). The legislature also enacted a high stakes high school proficiency test in 1991.

The MDE has worked hard to link these different legislative initiatives together into a coherent reform. The Essential Goals and Objectives were the basis of the state model core curriculum in 1990, and the State Model Core Curriculum provided a foundation for the state's frameworks in mathematics and language arts. The frameworks, which were being developed at the time that PA 335 was passed, are viewed as an opportunity to update the state's mathematics and language arts standards. The state will use the standards developed under the state curriculum frameworks projects as the state core curriculum, and is in the process of adopting the standards. The relationship between these new standards and the state's assessment program, particularly the new high school proficiency tests, is less clear.

As it experiences downsizing in the face budget cuts initiated by a hostile governor, the Department has developed a strategy of using (and enhancing) a public and professional infrastructure to build local capacity to implement these education reforms. As discussed below, this infrastructure includes intermediate education units, like the state's Intermediate School Districts (ISDs) and regional math/science centers, professional organizations, like the MRA and MCTM, and privately-supported organizations, like the Michigan Partnership for a New Education.

Components of Systemic Reform

This section describes the major state policies and programs that affect the teaching of reading and mathematics in grades K-8 and discusses linkages among them. It is divided into six categories: (1) curriculum, (2) assessment, (3) school accreditation, (4) teacher certification and recertification, (5) professional development, and (6) building an infrastructure of reform.

Curriculum

At the time of this study, Michigan had two documents that presented the state's vision of reading and mathematics education: the State Board of Education's Model Core Curriculum Outcomes and the Michigan Essential Goals and Objectives [one in reading and one in mathematics].

The Model Core Curriculum Outcomes were developed in response to Public Act 25, which requires the State Board of Education to develop a model core curriculum in nine areas (mathematics, science, arts, communication skills, life management skills, employability skills, technology, world studies and foreign language). Districts were then encouraged to develop their own core curriculum based on this model. The state used several mechanisms to encourage local adoption of this curricula: (1) small incentive grants ($25/pupil); (2) a requirement that districts produce annual education reports, which include copies of their core curriculum and its relationship to the state model; and (3) a new outcome-based accreditation process that included the implementation of a core curriculum in its accreditation criteria.

The Model Core Curriculum Outcomes include a set of broad student outcomes (e.g., "a person who values and is capable of learning over a lifetime," "a person capable of applying knowledge in diverse situations," "a caring, sensitive and flexible human being," and "a competent and productive participant in society"), and a set of general curricular, instructional and school improvement principles that include taking into consideration differences in a student's environment and experiences and building on students' existing cultural strengths. It then specifies a set of learner outcomes in nine curricular areas, including mathematics and language arts (MSBE, 1991).

The Core Curriculum Outcomes were based in large part on the more detailed Essential Goals and Objectives. Developed in the early 1970s as a set of minimal performance objectives for the state's assessment program, MEAP, the Essential Goals and Objectives have been updated periodically to reflect national changes in the teaching of reading and mathematics. They are still used to guide development of the MEAP tests. Part of the development of the most recent mathematics Essential Goals and Objectives was writing specifications for MEAP test items.

The Core Curriculum Outcomes and Essential Goals and Objectives focus on student outcomes, not teacher pedagogy. A third set of documents, under development during the time of our field work, are designed to address this gap. The Michigan mathematics and language arts Curriculum Frameworks Projects will update state standards in these two subject areas (as well as in science and social studies), and create guidelines and models for teacher education and professional development in these disciplines. The frameworks projects were launched in fall 1993. The passage of Public Act 335 in December 1993 changed the context of these documents, however. Public Act 335 now *requires* school districts to adopt the state core curriculum in mathematics, science, history, geography, economics, American government and writing by 1997-98 (although there is an escape clause—districts "may vary" from the model academic core). Faced with the need to establish a state core curriculum, the Superintendent of Public Instruction and the State Board of Education have decided, where practicable, to use the standards developed under the curriculum frameworks projects as the state core curriculum. The state conducted public hearings on the revised standards in November 1994. After incorporating public comment, the MDE will send the standards to the SBE for their review. The SBE will then present the standards to the Legislature and Governor for their approval. The process must be completed by 1996 in order to give the districts a one year exposure to the frameworks prior to their required adoption.

Reading. Reform of reading education in Michigan dates to the early 1980s, when, at the request of the SPI, the MDE reading consultant formed a joint committee with the Michigan Reading Association to review and rethink reading curriculum. This process resulted in the adoption of a new definition of reading that recognized comprehension as the ultimate goal of reading and emphasized the interactive, constructive, and dynamic nature of the reading process (Wixson and Peters, 1984). This new vision of reading was subsequently incorporated in the state's revised Essential Goals and Objectives for Reading Education, published by the State Board of Education in 1986. The three main categories of reading objectives contained in this document are: (1) constructing meaning, which includes the sub-categories of interactive reading and skills for constructing meaning; (2) knowledge about reading, which includes the sub-categories of goals and purposes, reader-text-contextual factors that influence reading and strategies; and (3) attitudes and self-perceptions.

After the passage of Public Act 25, the MDE reading specialist rewrote these goals and objectives as core curriculum outcomes for reading. The Core Curriculum Outcomes for Language Arts define separate outcomes for reading, writing, listening, speaking and literature for three different clusters of grade levels: K-3, 4-6, 7-12. Although the document describes an overall outcome for language arts, the components are treated individually, and the outcomes do not incorporate the other areas.

The language arts frameworks project currently underway is striving to try to integrate reading, writing, speaking, listening and literature into one English Language Arts curriculum framework. There is a high level of involvement of professional organizations and teachers in the field. The MDE has had strong cooperation and leadership from the Michigan Reading Association, and the Michigan Council of Teachers of English speech committee. Teachers in the field are participating in the process on a variety of levels.

The proposed language arts framework has three parts: a vision statement, ten content standards, and benchmarks (MSBE, 1994). An equity panel is trying to ensure that the content standards are appropriate for all students. In June of 1994, the committee pulled together exemplary practitioners to create scenarios, or examples of the what the content standards should look like in the classroom. In year two they will set up demonstration sites, and in year three there will be test pilots.

The content standards have been developed and approved for field review and public hearings by the State Board of Education. The ten standards address meaning and communication, language, diversity and culture, voice, self-regulation and reflection, genre and craft of language, depth of understanding, ideas in action, inquiry and research and critical standards. Benchmarks are being developed as well as standards. Benchmarks are demonstrations of the content standards at four, non-grade specific levels: early elementary, later elementary, middle school and high school. Each level is required to demonstrate the outcome in a level appropriate manner.

The new SBE has expressed some areas of concern with the frameworks. First, they felt there was too much emphasis on multiculturalism in the language arts framework. The SBE believes it belongs in the social studies framework if it belongs anywhere. The second criticism was that they could not find the basics, like spelling, in the content standards. They had been placed in the benchmarks section, but the committee did rewrite one of the content standards to reflect the spelling concern. One measure of the Board's opposition to the new language arts framework was their decision in April 1995 to temporarily withhold the third year of federal funding of the frameworks project from the contractor, the University of Michigan. This last year of funding was earmarked for the refinement of the performance standards and for professional development in support of the implementation of the content standards. The SBE is also reported to be investigating an intensive phonics-based, direct instruction program (*The [NCTE] Council Chronicle*, 6/95).

Mathematics. The Core Curriculum Outcomes and Essential Goals and Objectives in mathematics both incorporate the NCTM standards. The Essential Goals and Objectives were revised in 1988, under contract with the Michigan Council of Teachers of Mathematics. The Essential Goals and Objectives are written to a framework of eight content strands and six process strands. The content strands are (1) whole numbers and numeration, (2) fractions, decimals, ratio and percent, (3) measurement, (4) geometry, (5) statistics and probability, (6) algebraic ideas, (7) problem-solving and logical reasoning, and (8) calculators. The process strands are (1) conceptualization, (2) mental arithmetic, (3) estimation, (4) computation, (5) problem solving, and (6) calculators and computers (MSBE, 1990). The Core Curriculum Outcomes are structured around the same eight content strands, and summarize the objectives contained within the Essential Goals and Objectives.

Because they are designed in large part to guide the development of the MEAP test, which is given in grades 4, 7, and 10, the mathematics objectives are grouped by grades K-3, 4-6 and 7-9. As a result, they have been criticized as paying too little attention to more advanced topics typically covered in grades 11 and 12 (Thompson, Spillane and Cohen, 1994). The goals and objectives have also been criticized as being too behavioralist. As one respondent noted:

> The Essential Goals and Objectives are a linear statement of goals. The core curriculum outcomes reflect the NCTM standards, but this doesn't do it. How does a district go from outcomes to an instructional program? The constructivist approach is not all together yet.

The curriculum frameworks project is designed to address these concerns.

The mathematics frameworks project is designed to update the state's mathematics standards, provide a set of high school standards (9-12), and recommend a set of benchmarks for each standard for three points in time: early years, middle years, and secondary years. The draft Content Strands, Standards and Benchmarks contain 15 standards, grouped by six strands: (1) patterns, relationships and functions, (2) geometry and measurement, (3) data analysis and statistics, (4) number sense and numeration, (5) numerical and algebraic operations and analytical thinking, and (6) probability and discrete mathematics (Michigan Mathematics Curriculum Framework Project, 1994).

In addition, the state mathematics supervisor, who co-chairs the mathematics frameworks project, sees the project serving two broader goals: assisting districts in meeting the state mandates and school improvement goals, and setting a foundation for state policy (e.g., aligning assessment, teacher certification, and criteria for grants allocation). The project is developing sample opportunity to learn indicators for each content standard, as well as performance standards.[6]

Assessment

Michigan has had a statewide testing program in reading and mathematics, the Michigan Education Assessment Program, since 1970. All students are tested in grades 4, 7 and 10 in mathematics and reading, and in grades 5, 8 and 11 in science. The Michigan Essential Goals and Objectives provide the basis for the MEAP. The current MEAP mathematics assessment, first administered in 1991, is consistent with, but not exactly aligned with, the NCTM standards. The test is primarily a multiple-choice format, with three open-ended questions that are graded at the option of the district. The current reading MEAP, which dates from 1989, is based on the Essential Goals and Objectives adopted by the SBE in 1986.

Although the MEAP is designed to drive curriculum change in school districts, and not to hold students accountable for their performance, a 1991 law requires students to pass the MEAP in reading, mathematics and science in order to receive a state-endorsed diploma in 1995-96. In 1997, students must pass a new tenth grade high school proficiency test to receive a state-endorsed diploma. The test will be given in tenth grade, so students have an opportunity to retake the test several times before graduation. There is an assumption that the new proficiency tests will replace the tenth grade MEAP. The high school proficiency test was Governor Engler's initiative with the backing of the business community. It was also supported by a small number of education leaders in the legislature who were motivated by concern for the bottom half of the graduating class.

A number of issues remained unresolved about the proficiency tests, including the nature of the tests, funding, and fit with other state policies. The SPI views the new testing requirement as an opportunity to develop state-of-the-art assessments of higher level skills in academic areas. It is the MDE's responsibility to develop the test, but the Department's assessment bureau is understaffed and underfunded. One respondent noted that the MDE was "given $407,000 to develop a $900,000 test." The MDE contracted with the MRA and the MCTM to develop frameworks for the new assessment. It is unclear to what extent these frameworks will differ from the Essential Goals and Objectives already in place in the state, or how they will relate to the standards being developed by the language arts and mathematics curriculum frameworks projects. The assessments are being developed with the assistance from ACT and CTB McGraw-Hill. Michigan educators are writing the items and developing assessment plans, and the contracts provide technical expertise, editing and facilitating. The MDE hopes to have new tests by fall of 1995.

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[6] Public Act 335 requires the SBE to appoint a state level academic performance standards committee to recommend student performance standards in at least the areas of mathematics, science and communication arts by December 1995. By July 1996, school districts must establish their own performance standards that are aligned with their local core curriculum as part of their accreditation process.

An even more ambiguous portfolio requirement was legislated along with the new high school proficiency test. In response to Governor Blanchard's Employability Skills Task Force in 1989, the MDE assessment division had developed an "Employability Skills Portfolio" for grades 9-12. This portfolio consists of three parts—academic skills, teamwork skills, and personal management skills. In 1991, the legislature mandated portfolio assessment for all students in grades 8-12 in districts receiving state aid, and a year later, identified four areas that these portfolios should cover—planning activities, academics, career preparation, and personal recognition. The state, however, cannot prescribe a particular model of portfolio assessment (Thompson, Spillane and Cohen, 1994). Public Act 335 requires all school districts to start maintaining portfolios by 1994-95. It further specifies that portfolios can only contain material entered with the student's consent, but must contain academic and non-academic plans, transcripts, assessment test results, career preparation information and recognitions and accomplishments.

The correct use of portfolios will require an investment on the part of the MDE and the districts because teachers do not know how to observe the students performance. There is a concern that if the portfolio requirement is not taken seriously then it will be "used as a glorified record of the student's history, not what the student can or can not do."

School Accreditation and Accountability[7]

Michigan's main mechanisms for accountability are the annual report and accreditation provisions of Public Act 25 of 1990. The annual report provision of Public Act 25, which dictates a substantial sanction for non compliance (loss of 5 percent of all state funds received by the district), requires local school boards to prepare and distribute annual education reports. In 1993 Public Act 335 expanded the 5 percent penalty from the annual report alone to accreditation. Public Act 335 also makes accreditation contingent upon meeting several criteria, including preparation, distribution, and submission of an annual report.

The annual report must include a status report on the school's school improvement plan (SIP) and student achievement data from local, state, and or national tests and any other measures chosen by the school. The report must include a retention and dropout rate report, a description of specialized schools (e.g. magnet schools, schools emphasizing a particular set of subjects, back to basics academies) and the process of enrolling students in such schools, and data on parent participation in student-teacher conferences. Schools must also report on the status of their accreditation and on the school's core curriculum and its implementation, including how the school's core curriculum differs from the State Board's Model Core Curriculum [now the more restricted "academic core curriculum" mandated by Public Act 335 of 1993].

The accreditation process encompasses seven areas: purposes of the school; school improvement/student outcomes; curriculum and instruction; organization and administration;

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[7] This section is drawn from Thompson, Spillane and Cohen (1994), pp. 37-45.

school staff; school and community relations; and facilities and equipment. A school must meet all of the standards in order to be fully accredited. Further specification is provided in a set of "Indicators for Michigan Program Accreditation Standards."

The accreditation process includes several steps: (1) self study, (2) data collection, (3) development of student outcome goals, (4) development and implementation of a school improvement plan, and (5) visitation by a team of local and university based educators from outside the district to guide the process and confirm that the planned change has taken place ("validation"). The validation or outside review was to focus on the school improvement process, not on whether the standards themselves are met. A training manual commissioned by the MDE emphasizes an assistance rather than an accountability role for the team. Despite this, many legislators see accreditation as a regulatory, accountability-oriented process. One prominent state senator referred to the accreditation component of Public Act 25 as "our hammer" (Thompson, Spillane and Cohen, p.42).

By Fall of 1993, it became obvious that the MDE could not handle the volume of work required to administer the accreditation program: the review of 500 to 600 schools a year in a six to seven year review cycle. The School Development unit planned to turn to the ISDs to assemble and mange visitation teams composed of outside administrators, university people, teachers, and community members. But Public Act 335 tried to ease the burden placed on both on the Department and on the schools by calling for the development of a streamlined, "summary" accreditation process. The new process would be designed by the Department, revised based on public hearings and approved by both the State Board of Education and the Senate and House committees responsible for education legislation. The summary accreditation process designed and proposed by the Department included both basic compliance provisions and quite specific outcome or student performance provisions.

Several associations representing local school districts and educators have protested the inclusion of student performance criteria in the summary accreditation process. They are also concerned about which orientation the process will take—validation or basic compliance or accountability for specific levels of measurable outcomes. What first appeared to be a mere administrative streamlining process may turn out to have real substantive consequences.

Teacher Certification

In 1986 Public Act 267 required that all prospective teachers pass a basic skills and subject area test to be certified to teach in Michigan. The testing began early in 1992. There are 78 subject exams, as well as tests in elementary education, basic skills, reading, mathematics and writing. In December of 1992 the law was revised to require that teacher education students pass the basic test prior to their student teaching and the subject test prior to their certification. In addition to passing the assessments, candidates must have an academic major and minor, and have the requisite course work in the area they are testing. In 1992, the state created differentiated elementary certificates. The basic and elementary education tests are required to teach grades K-6 or K-8 self contained. An additional subject test is required to teach a subject at the grade 6-8 level. Teachers who are already certified do not have to take the exams unless they want a new endorsement. Out of state teachers who want to teach in Michigan are required to pass the exams to be certified. The teacher preparation institutions did not support the concept of the new testing program, but the legislature was determined to enact the new teacher certification program.

The assessment program was developed in a relatively short period of time, between 1991 and 1992. The reading test is the only test that did not validate. Each year, five subject areas are selected for redevelopment. The decision to redevelop tests is based on how frequently the test is given (high frequency tests are redeveloped more often), what is happening in the field and if there has been any change in the law that would require the revision of a test. The tests are being developed by National Evaluation Systems, based in Amherst, MA. Test development committees will be composed of teachers (40 percent), teacher educators (40 percent) and other people involved in K-12 education (20 percent).

The most recently redeveloped tests, which were administered in 1994 are math, science, language arts, and industrial arts. The reading endorsement and comprehensive elementary tests were redeveloped and administered the previous year. The MDE started the redevelopment process for health, early childhood education, and English and Spanish in 1994. Each of these will include the piloting of a performance based component. Although the MDE is in the process of developing curriculum frameworks in several of these areas, the teacher tests are current with the existing model core curriculums.

The relationship between teacher preparation and teacher testing is evolving. Initially, there were problems with some of the tests, which stemmed from the fact that the teacher education program requirements were not consistent with the teacher certification tests, which were designed to reflect current curriculum requirements. The objectives for the tests are distributed to the teacher preparation institutions in advance, so that they know what their teacher candidates are going to be tested on. Analysis of their students results should allow the universities to modify their programs as necessary. The short term response has been workshops to prepare for the tests, but this is not the long term systemic approach that the MDE is hoping to see.

The State Board of Education has asked the MDE staff to look into outcomes based teacher preparation, and to explore testing pedagogy. They have also expressed an interest in the possibility of performance testing as part of the teacher certification test.

Professional Development

The State plays a minimal role in teacher professional development. There are no specific state policies on professional development for reading, mathematics, or other curricular areas, and the state does not provide professional development directly. Public Act 25 calls for school improvement plans to include plans for professional development that are linked to the school's objectives for improvement, which, in turn, are supposed to focus upon implementation of a core curriculum. The state appropriates only limited funds to support professional development, however. At the time of our study, the major source of funding was Section 98 of the annual education appropriations bill. In 1993, the legislature appropriated $1.9 million in professional development funds to local school districts and ISDs under a competitive grant program. This funding, along with the defunct Sections 97 and 90[8], was local school districts' primary source of support as they developed their core curricula and trained teachers in the new pedagogical techniques, especially in the field of reading. The MDE's School Improvement Unit, which manages Section 98, looks for evidence that districts will use these funds to implement the core curriculum outcomes and broad student outcomes they have delineated in their school improvement plans. The state relies on its federal Eisenhower funding to support professional development in mathematics and science. The state received approximately $6 million for K-12 programs; $5.4 million is allocated to local school districts on a per pupil basis.

Another source of funding for professional development is the extended school year grant enacted under Public Act 25. This program provides $200 per pupil to local school districts to extend their school day to 200 days. Districts can use up to ten days for professional development. In 1993, 17 districts were implementing the program; another nine were in a planning phase. Districts get these funds for three years, then the local district must pick up the cost of the program.

Public Act 335 made two major changes to the state role in professional development. First, the new legislation increased state professional development funds from less than $2 million to $10 million for fiscal 1994-95. Sixty-five percent of the funds will be allocated to local school districts on a per pupil basis (about $4.25 per pupil). Another $1.5 million will go to ISDs, also on per pupil basis. Two million dollars will remain in the MDE to support statewide professional development initiatives. Second, to qualify for new state funds, local school districts must submit professional development plans to the state. These plans are to be reviewed initially by a peer review committee in their ISD, and then forwarded to the MDE for approval. The law established criteria for the use of professional development funds at the local level, including improvement in teaching and learning the core curriculum for teachers and administrators, activities associated with the school improvement process, community leadership development, promotion of high standards and sabbatical leaves for master teachers who aid in professional development. District plans must also promote "serious, informed innovation."

The state recently adopted a set of professional development standards to be used in reviewing and approving funding applications from the LEAs and ISDs, and for coordinating professional development funding and activities across the MDE. The standards, which reflect current research on effective professional development and criteria published by the National Staff Development Council and the U.S. Department of Education, are organized into three categories: the context, process and content of professional development. The context standards address the organization and system in which the new learning will be implemented, and discuss the need to place individual professional development in the context of school improvement efforts. The process standards describe how educators will acquire new knowledge and skills, while the content standards generically address the kinds of skills effective educators need to possess or acquire through professional development (e.g., educators as facilitators of student learning in the core areas, their ability to provide a challenging and developmentally appropriate curriculum, and their knowledge and use of interdisciplinary instruction and cross-disciplinary teams) (MSBE, 1995).

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[8] Section 97 used to provide grants to ISDs and local school districts to develop professional development programs. Section 90 used to provide up to $50,000 per building and $150,000 to support restructuring. This latter program lasted only two years. "There was insufficient change in buildings to convince the legislature."

Building an Infrastructure for Reform

The MDE has a history of collaborating with professional associations to develop standards, to disseminate information on new standards and curriculum, and to build capacity at the local level. Because of limited fiscal and personnel resources, however, the MDE has turned to intermediate service districts, professional organizations, teacher unions and colleges and universities to provide professional development to their members and to schools and school districts. This strategy has intensified in the last few years, as state department resources continue to be cut.

Intermediate Service Districts. Intermediate service districts (ISDs) are county-level (or multi-county in the more rural areas of the state) agencies that exist primarily to provide specialized services, such as special education, vocational education and gifted and talented programs. These entities are funded in part by their own tax levy, in part by tuition from local school districts and in part by state grants. Public Act 25 added another set of responsibilities to the ISDs—providing technical assistance to schools in school improvement, achievement, data, core curriculum and accreditation. The state, however, provided little additional funding to support this new mission. The state funds the equivalent of a part-time school improvement consultant in every ISD. These staff help districts identify resources to help them develop core curricula and implement the school improvement planning process. They have neither the time, nor the expertise, however to provide professional development in academic areas. Because of the funding structure of the ISDs, their capacity to assist districts in other areas is strongly related to the size of their tax base. ISDs in the more affluent counties have the resources to provide a broader range of services and to hire more, and more experienced, staff.

Both of our study districts pool their Eisenhower math/science funds with other districts in their ISDs. These funds are then used to provide professional development in mathematics and science education. Of particular interest to this study is a program called the Michigan Mathematics Inservice Project (MMIP), co-sponsored by the Michigan Council of Teachers of Mathematics (MCTM) and the MDE. This project is a statewide collaborative, funded largely by Eisenhower higher education and local formula grants. It is designed to acquaint K-8 teachers with the Essential Goals and Objectives for mathematics and the NCTM curricular and professional teaching standards. A trainer of trainers program for K-6 was initiated in 1990-91 and grades 7-8 in 1991-92. A total of 550 facilitators will be trained in eight day sessions; 300 facilitators have been trained to date, and 7,000 of the state's 42,000 elementary teachers have participated in MMIP's 30 hours of training, which generates three credits of CEUs for participants.

Mathematics and Science Centers. Another institution with the potential to assist schools and school districts in the areas of mathematics and science are the state's mathematics and science centers. The first mathematics and science center was established in Kalamazoo in 1986 with private funding from the UpJohn Company. Its primary purpose was to provide accelerated mathematics and science programs to talented students through a half-day program at the Center's facility. The Center also provided some outreach activities to teachers and other students in the area. In 1988, Governor Blanchard proposed expanding the concept to a series of state-funded centers.

The Mathematics and Science Challenge Grant Program established regional centers throughout the state to provide accelerated learning experiences for secondary students and technical assistance for local school districts to improve their math/science programs. The Centers must address core curriculum and support systemic change. The Centers host some reform projects (e.g., MMIP). They began with a $1 million appropriation by the legislature in 1990-91; it was increased to $2.8 million in 1993-94. Twenty Centers serve all but ten of the 88 counties in the state. They are housed in local school districts or ISDs, so they are close to the needs of districts. The Directors have formed a Network which meets quarterly. In 1994, this Network successfully lobbied the legislature to approve a $6 million request to expand the scope of the Centers and to cover the rest of the state. This appropriation should enable the 20 existing and five proposed centers to offer six basic services: leadership in improving mathematics and science education, student services (through accelerated course and outreach programs), support for the development of new mathematics and science curricula, community involvement to increase awareness and leverage resources for reform, professional development, and resource clearinghouse.

The new state appropriation for the Mathematics and Science Centers should begin to equalize the level of services provided by the Centers. To date, there is considerable difference in the resources available to the centers (the size of the staff, scope of the program and quality of the facilities reflect the availability of private funds, such as UpJohn in Kalamazoo and Kellogg in Battle Creek, and local public funds) and the historical emphasis of the centers—accelerated programs versus professional development and technical assistance.

Professional Organizations. Professional organizations in Michigan have traditionally played a major role in the development, dissemination and training of teachers in reading and mathematics reform programs. The Michigan Reading Association (MRA) assisted with the revision of the Essential Goals and Objectives in reading in 1976 and again in 1982-83. More recently they received a contract from the MDE to develop the frameworks for the new high school proficiency test in language arts, and representatives of the MRA and Michigan Council of Teachers of English (MCTE) serve on committees of the language arts curriculum frameworks project. The language arts organizations, especially the MRA, play a major role in reading professional development. Their goals are to keep their membership informed about changes in the area of reading (including proficiency testing, NSP, quality of textbooks), to plan staff development programs, and to work with the MDE to provide guidance between the state and local level. MRA members speak to local reading councils, and some MRA members also hold positions with ISDs. In the mid-1980s, the MDE's reading specialist worked with reading specialists throughout the state to present dozens of local and regional workshops that introduced thousands of local educators to the then new research on reading. These sessions were designed both to teach the participants about the new ideas and to prepare them to train others in their own districts.

The MCTM has been similarly involved in the design and implementation of Michigan's mathematics reforms. The MCTM assisted with the 1976 and 1986 revisions of the Essential Goals and Objectives in mathematics and hold the contract to develop the framework for the high school proficiency test in math. MCTM members are also well-represented on the mathematics curriculum frameworks project committees. MCTM has played an active role in disseminating information on the revised mathematics objectives to its members, and as discussed above, the organization co-sponsors the MMIP training with the MDE.

Unions. The state's principal teacher's union, the Michigan Education Association (MEA) is also involved in providing professional development opportunities for their members. The primary goal of the MEA is the empowerment of their members, supporting them in their efforts to try to change schools and to develop themselves. The MEA provides training in a broad range of areas, including school improvement, human rights, sex, ethnic and gender issues and special education. They also do work in the area of pre-service training. The MEA has worked closely with the SDE in a variety of areas. They have participated in the PA 25 training coalition aimed at helping members implement the new requirements, training members of state curriculum development committees, and evaluating the core curriculum outcomes documents. The MEA has an "800" number that people use to call for professional development and research in the area of curriculum and teacher certification, and they provide information on the state's MEAP assessment. The MEA provides site coaches for each of their professional development schools, called "pioneer schools;" these coaches help with strategy and intervention plans.

The MEA develops its programs both in and out of house. For large projects, they cooperate with university professors, or appeal to their membership to provide presentations.

The Michigan Partnership for a New Education. An important, and somewhat unique, player in education policy and professional development has been the Michigan Partnership for a New Education (the Partnership). As discussed above, the Partnership is a non-profit corporation established in 1990 as a collaboration among Michigan business, education and government. It receives state as well as private funding. The Partnership has four program units, or components: (1) the School and University Alliance which focuses on the creation and maintenance of local innovation and preparation sites for educators (working with professional development schools); (2) the Business and Community Alliance which develops locally-based coalitions to support local innovation in the schools; (3) the collaborative Leadership Center which develops a critical mass of leaders in education reform; and (4) the Educational Extension Service (EES) which provides schools with practical, research-based knowledge.

Professional development schools (PDS's) have been a significant component of the Partnership's activities. These schools are one way that the Partnership addresses its overall professional development goals, which are discovering new and better ways of teaching, and building capacity in the districts and universities. A PDS brings together the education faculty of a sponsoring university and the administrators and faculty of a school to discover new and different ways of teaching. The emphasis is on identifying "best practice," and on providing a place where future teachers can be exposed to these practices and methods of inquiry. PDS's can provide an opportunity for current teachers to observe new techniques and interact with university faculty and their colleagues on new and different ways to teach and provide an avenue to influence colleges of education in ways that would help them restructure their pre-service programs to reflect the new practices and state requirements. Professional Development Schools are also viewed as potential resources for other schools and teachers, and can provide opportunities for them to learn about new teaching techniques through visitation.

The EES' Frameworks Project is a process and set of resources for use by local school districts as they rethink their curriculum in light of the state's core curriculum outcomes. The primary purpose of the project is to help local school districts understand the rationale and research base related to the state's core curriculum outcomes, and to help schools improve their curriculum and teaching and learning. The project works with and through the state's ISDs.[9] It does not provide services directly to school districts. Frameworks is designed to unfold in three phases. Phase I supports local districts to establish an "overarching curriculum framework," composed of broad student outcomes and general content outcomes. Phase II products and services are designed to help local school districts "apply" this overarching framework to mathematics, science, social studies and/or language arts/literacy and to assist them in developing their own core curricula in these areas. A major component of Phase II is a Resource Library that includes a guidebook to guide districts through the curriculum development process, research summaries and annotated bibliographies, and an extensive library of research on developments in a given curricular area. Teams from local districts may also attend regional summer workshops sponsored by the Partnership. Phase III involves implementation of local district curricula. The Partnership had planned to develop a series of products to assist in this implementation, including rubrics for assessing the quality and utility of curricular materials, and an assessment frameworks project (to be developed in collaboration with NCREL and the PDS Assessment Task Force) that would assist districts in the selection and development of new assessments.

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[9] The EES has collaborated with nine ISDs and five community colleges in northern Michigan, and Central Michigan University, to create the Northern Lower Michigan Leadership, Teaching and Learning Consortium. This Consortium serves as a vehicle for sharing and strengthening resources for professional development in a sparsely populated area of the state. It also serves as a major distribution channel for EES products and has helped organize Frameworks activities in its service area.

The Partnership named a new president in 1994 and is currently rethinking its mission and activities. For example, the Partnership, which moved off the MSU campus, will no longer support the Frameworks Project, and plans to reduce its commitment to PDS sites from 26 to 10.

District Reform Efforts

This section of the case study briefly describes the two school districts included in the Michigan study, discusses their role in supporting instructional change in their schools, and identifies factors that supported and inhibited mathematics and reading reform efforts in grades K-8.

Study Sample

During the first data collection phase of the study, state-level respondents were asked to identify school districts that were taking the lead in reforming their reading and/or mathematics curricula. We also conferred with other researchers who were examining mathematics and reading reform in Michigan. We then identified two school districts for inclusion in our study. Both school districts are small (3,300 and 5,000 students), with predominately Caucasian student bodies. They are suburban communities housing a mixture of blue collar and middle class families. About 60 percent of the students in both districts continue their education beyond high school. Student achievement, as measured by performance on the MEAP, is average for the state in grade 4 in both districts. In grade 7, one district scores above the state average, the other below. Both communities are supportive of education, as reflected in their continuing support of school millages and school superintendents. They spend at about the state average, but have high education tax rates. The superintendent of MI1 has been in his current position for six years, the superintendent of MI2 for 14 years.

The staff in both districts are very experienced, and neither district has much staff turnover. We surveyed and interviewed ten teachers in each of the two districts— five in one elementary and five in one middle school—for the study. Looking across the twenty teachers in the two districts, we found that about 60 percent of teachers in sample have masters degrees. In the elementary grades, these degrees tended to be in reading (5 of 7). In middle school, only two of the five teachers with masters degrees held graduate degrees in the discipline they were teaching (either mathematics or language arts). Other degrees were in adolescent education, health, and curriculum instruction.

Superintendents in both communities are trying to change the composition of their teaching staff as new hires become available due to retirements and/or enrollment growth. One district just initiated a voluntary incentive program for early retirement. The districts are looking for the following characteristics in their new hires: "humanistic, helpful" on the Lafferty lifestyle scale, not competitive, holding a constructivist philosophy, and able to engage students.

District Role in Support of Instructional Change

Central office staff were the driving force behind reform efforts in both of our study sites. Both districts are in the midst of restructuring efforts, initiated and championed by their current superintendents. While taking somewhat different approaches to restructuring, the vision of change in similar in both communities. This vision includes the empowerment of teachers and other stakeholders, the devolution of authority to schools for curricular/ instructional and some professional development decisions, an emphasis on the use of research in making decisions at all levels of the system, and increased attention to higher standards for students and the development of learner-centered classrooms. Both districts support the view that all students can learn. District staff also feel that their role, and the role of principals should change from being purveyors of "top-down" policy to serving as leaders and facilitators in the new world order.

MI1 has a tradition of school-based reform. Schools first undertook school improvement planning in 1982, long before Public Act 25 required this of districts in Michigan. When the current superintendent arrived in 1988, he started to develop a district improvement plan. School staff were concerned that this activity would take away from building goals, but the district's goals are broad enough to encompass school plans. The superintendent has taken the lead, however, in establishing professional development schools with Michigan State University, and initiating restructured time for professional development, an extended school year, and year-round education in one of the elementary schools.

MI2 undertook its restructuring efforts in 1990-91, in response to the Public Act 25 requirement for developing core curriculum, student outcomes, school improvement plans and a long-term plan for the district. The district is basing its restructuring program on the principles of Deming and TQM. All of the district's administrators and many teachers have received training in Quality principles, and the district belongs to the Deming network and support groups. What had been a very top-down management approach is being replaced with "systems design," where, in the words of one respondent, "leadership moves around those who have developed the vision and knowledge to assume leadership." The primary goal of restructuring is the creation of learning-centered classrooms, which will consist of hands-on learning, more use of manipulatives, fewer dittos, more writing, integrated thematic units, cooperative learning, problem-solving strategies, and the teaching of higher order thinking skills. Reform is being implemented through the work of building improvement teams, teacher coaches, school governance councils, individuals and chairs of task forces and committees. A major reform activity in the district is the development of staff knowledge through professional development, reading, teachings, presentations, visits to "world-class" districts, and collaborations with Michigan State University and Western Michigan University.

The two districts are undertaking similar activities in support of instructional change. These include: (1) extending and restructuring teacher time to provide an opportunity to learn about, try out, and reflect on new practices; (2) new forms of support for teachers; (3) peer coaching; and (4) opportunities for interdisciplinary teaching. [These are discussed in detail in a later section of this case study.]

District Curriculum Policies and Initiatives

Both Districts MI1 and MI2 have established broad student outcomes and are working at the school and district level to set more specific academic outcomes/objectives in several curricular areas. MI2, for example, set four broad learner expectations for all members of the school community (students, teachers, staff and community members): healthy person, community participant, collaborative worker, and thoughtful learner. Both districts use curriculum committees or task forces, composed of administrators and teachers, to review and revise their curriculum on a regular cycle, generally every five to six years. The task forces are also developing objectives, or performance indicators, for each grade level, or grade span, reflecting a concern with the lack of K-12 articulation within the disciplinary areas. Both districts also adopt textbooks for use throughout their school systems.

Reading

Both districts had adopted the state's reading objectives, developed in the late 1980s, and are in the process of reviewing this curriculum area. MI1 is exploring the merger of its reading objectives with its communication arts objectives (paralleling the merger at the state level in its proposed language arts frameworks). MI2 has started its curriculum review with K-3 listening and speaking objectives. "We started with listening because it was not threatening, there were not existing guidelines to break. Also we felt the need to learn more about that area."

Math

Both districts are in the process of developing new mathematics objectives. MI1 developed new performance indicators in grades 8-12 in 1992-93 and adopted a new text series in support of those objectives: the University of Chicago series. It is developing performance indicators in grades K-7, but has yet to purchase new instructional materials. The district is implementing transition mathematics in eighth grade and piloting a transition mathematics course in the seventh grade. The mathematics objectives were developed with both the state objectives and NCTM standards in mind.

MI2 developed mathematics outcomes last year that incorporate the state core curriculum and NCTM strands. It is now setting specific grade level objectives for each of these strands, starting with grades 4-6. The district has a goal of offering pre-algebra in the sixth grade, pre-algebra and algebra in the seventh and algebra in the eighth grade, with all students having had algebra by ninth grade. One respondent noted that as a result of these curriculum development activities, teachers are familiar with the state's vocabulary in math—which is the NCTM vocabulary—and with the need to move instruction more towards application. However, the district "currently has a traditional curriculum...we are just now trying to look at curriculum issues." One major curricular initiative in mathematics is the introduction of Japanese math, which is being used in two grades in one elementary school.

Interaction with Schools

It isn't clear how restructuring relates to curriculum reform in these two districts. Although district administrators have taken the lead on structural reform in their districts, they state that they don't want to do "top-down" systemic reform. Their strategy, instead, appears to be one of encouraging and empowering their schools and staff to identify and address critical curricular areas, while educating their boards and communities to the need for change.

> The buildings have taken the lead, moving in seven different directions. We don't ask them to jump through hoops, but try to help them. My [curriculum director] role is that of a facilitator and research person.

In the words of a long-time school board member in the other district,

> We've been open to change proposals that have been brought to us [by the staff] and have tried to set guidelines under which we'll approve change. One guideline is that there must have been community input. The pilot cannot jeopardize the core operation of the district, it must be financially sound, but we will help them look for funding sources.

Some schools in these districts have chosen to be professional development schools, others pilot curriculum in different academic areas. These decisions are made by school staff, as part of their school improvement plans, but are informed by district personnel who identify promising programs for the districts and often negotiate school participation in the initiatives.

For example, one elementary school in MI2 has had improvement of mathematics achievement as one of its school improvement goals since 1991-92, and has been working to revise its mathematics curriculum and instructional practices for the last few years. Initially, this involved the use of manipulatives in the classroom. At the same time, the district's superintendent visited Japan and became interested in the way that mathematics is taught in that country. He applied for a grant to fund the development and implementation of Japanese mathematics in the district, and sent out questionnaires to interested staff. One teacher from every grade level in this elementary school volunteered to be part of the program, and it is now being piloted in grades 1 and 2 in that school. In MI1, the junior high school's response to restructuring was to institute teaming in the eighth grade, to become a professional development school (PDS), and to participate in the Wednesday PM [restructured time] program. The principal of the junior high school brought these ideas with her from the high school, where she had been the assistant principal and PDS liaison. This principal sees her job as having a sense of peoples' needs and directing them to help. She stated she reads constantly about change, and shows the pieces to her staff.

> I was hired as a change agent. The school opened in 1976, and was the same until 1991, when I came.... I want to bring in a lot of new ideas, expose my staff to new ideas. It's more a "seat of the pants" approach than anything formal.

But there is the issue of how to spread what schools and teachers learn from these initiatives. A respondent in MI1 noted,

> I would hope that we find a way to institutionalize some of the changes we found productive, a way to do them in other buildings so that all buildings have the same opportunity. I would like to see some of the curriculum changes become institutionalized if they are successful as pilots.

But,

> we will have to come up with a way that can help teachers that are resistant to change not feel threatened, and to realize how it can be more beneficial and exciting to their teaching. We may need to prioritize some of our change efforts and possibly slow down until we get some of our efforts institutionalized, so that people don't feel overwhelmed.

The philosophy of allowing schools to direct their own innovation leads to inconsistencies within the district. Schools select different areas of curriculum and instruction as their special areas of concentration. While each school may attempt to utilize the best techniques and research available, they run the risk of developing in different directions, without a clear understanding as to how the students will be affected as they progress through the district. At the same time, restrictions on the efforts of schools to innovate would not serve the students interests and would run contrary to the districts position of allowing schools to direct their own development. An administrator in MI2 commented:

> We have to keep focussed on the goal...The kids are now two years ahead [in math], that's ok as long as they are at ______, but what happens when they go to _____? So other teachers are starting to say, "we need to be a part of this," if we held the whole system until everyone was ready then you would "dummy it down" until all you would get is mediocrity.

Teacher and School Reform Activities

School Context

We visited one elementary and one middle or junior high school in each of the districts in our sample, and spoke to five teachers in each building. We found a positive climate of change in all of the schools in the sample. The principals support the reform agenda of their districts; in some cases, the principals were placed in their current positions by the superintendent to be change agents. The schools have established goals and are focusing some professional development and staff planning time on these goals. Some goals are directly related to achievement (e.g., improving mathematics skills, writing skills and literacy; working toward a constructivist approach to education); others are related to restructuring (e.g., teaming), the affective domain (student self-esteem), and increasing communication between home and school.

We also found a high degree of teacher involvement in planning, curricular and instructional decisions at both the school and district level, and a high degree of respect by the staff for each other and for their principal. Teachers are members of the districts' curriculum committees, and many staff are involved because of the small size of the districts. This participation provides teachers with the opportunity to review the state's objectives in a subject area, and to become familiar with research on best practice in that area. Most teachers reported that they had considerable influence over school policies on grouping, curriculum, the selection of instructional materials, course content, teaching techniques and criteria for grading. One junior high school teacher explained:

> We try as a staff to do our decision-making together. We do a lot of hashing out in staff meetings. [The principal] will bring issues to the table.

Another noted,

> We take votes about policies and rules at the staff meetings. We are in full control of that. We develop them depending upon what the students need. In the English department, we decide on what should be focused on at each grade. They decide on a framework, and the teachers can flesh it out in their classroom.

The teachers in this school feel they have even greater control over curriculum and instruction under teaming, since many decisions are made by that group. "Teaming has forced all the core teachers to connect."

Finally, principals in these schools are trying to create an environment where teachers are encouraged to take risks. In the words of one elementary school principal,

> [once you] have established goals, I believe one can get there in different ways, using different vehicles....By the same token, there is uncertainty [among the teachers], because the entrenched feeling is there is a right scope and sequence and pace. [Teachers] don't have the idea that if you have a final goal in mind, you can use any approach, using expertise and experience to get it.

Teachers in the other elementary school feel that its role as a PDS school has contributed to a climate that is conducive to change and to risk-taking. Teachers are given the time to reflect on their teaching practices as a result of released time, and they have the opportunity to see good teaching practices modeled.

There appeared, however, to be a tension between the districts' new directions and their old ways of doing business. Teachers in one of the districts noted that both their principal and district superintendent had been controlling persons, until the superintendent decided to implement restructuring. Many teachers in this district were disturbed about the way in which a new reading text was recently adopted, and the district appears to control not only most of the professional development time, but also the agenda of the monthly grade-level meetings.

Teacher Practice in Reading and Mathematics Instruction

Reading

Both districts were incorporating whole language instruction into their elementary reading programs. The teachers in our sample reported they spent little time on phonics and word recognition, and most of their time teaching comprehension strategies, text types and features, and responding to reading. Teachers in MI2 recently implemented a literature-based reading series (from Harcourt Brace) and were moving from the use of reading groups ("Joplin" plan) to whole group instruction. All of the teachers interviewed liked the switch to whole language, and all emphasized the goal of having students enjoy reading, as well as learning to read. The upper primary teachers (4th/5th grade) talked about their movement to more thematic instruction, and linking reading and writing. However, the teachers were also concerned about achieving the right balance of teaching reading skills and reading for learning. Several teachers in the elementary school in our sample raised concerns about whole group instruction, feeling that some students (slow learners) are falling through cracks. As result, the first grade teachers use a combination of whole group instruction and ability groups. The teachers were also mixed in their opinions of the new text series. Some feel it is too structured and would like to use trade books more. Others prefer the structure.

The elementary school in MI1 was further along in its implementation of reading reforms. In addition to shifting their instructional focus from "decoding words to understanding," the teachers were moving away from teaching reading as an isolated subject to incorporating it with other content areas and writing to be more "literacy" oriented. While MI1 had adopted a new text book series in reading, only one-quarter of the teachers in our sample use it. They are turning to trade books, book clubs and reading materials related to other content areas. One teacher gave the example that "all literacy units grow out of social studies.... [It is a] way of exploring a particular type of literature while learning social studies content."

At the junior high school level, the language arts curriculum in both districts emphasized language as a way of communicating ideas. This entailed connecting reading, writing and speaking, and an increased focus on the writing process. Teachers in both districts used a literature-based curriculum, teaching from a basal reader only 20 percent of their time. The teachers did vary, however, as to the percent of time they used whole group and small group instruction, and their emphasis on integrating reading into other curricular areas.

Math

Nearly all of the elementary school teachers in our Michigan sample reported using manipulatives more, textbooks less, and moving from instruction focused on computation to an increased emphasis on problem-solving and the use of mathematics in everyday life. They said they placed a heavy emphasis on increasing their students' interest in mathematics, and having their students learn mathematical concepts, how to solve problems, and how to explain ideas in mathematics effectively. On average, these teachers reported spending about one-third of their time teaching number facts, number relations and computation and one-third of their time on problem-solving and communicating about mathematics. They also introduced geometry, statistics and probability and algebra into their classes. The elementary school we visited in MI2 had introduced Japanese mathematics in grades one and two as one instructional reform. Japanese mathematics in these grades uses a lot of manipulatives, focuses on process over product, and introduced algebraic concepts as early as first grade.

Teachers in the two junior high schools we visited also reported teaching in a constructivist mode and a heavy emphasis on the teaching of problem-solving and concepts, and less emphasis on performing computations and algorithms. However, the teachers are quick to note that their teaching still needs more change.

> I've made huge progress from five years ago. Then I was very leery of doing group work, things outside of the book. I did lecture and the book. 80% of my time is still spent this way, and I am unhappy about this. 20% of my time has changed drastically—cooperative group work, projects.

Both districts have adopted curricula aligned with the state mathematics objectives and textbooks that use the NCTM standards as their format. The teachers rely heavily on the text, but those in MI1 argue that they must cover the topics in the text to prepare their students for the next grade.

> Instruction is driven to quite a large extent by the text because kids have to take the next book in the series next year. The high school is depending on our instruction to feed into high school classes. This is a grade 8-12 series. We are stuck in this rut. But teachers had a huge input into the book chosen....If I am driven by a text, glad to be driven by this one.

MI2 has eliminated its remedial mathematics classes in order to give all students exposure to algebra. Previously, only one quarter of the 7th and 8th graders studied algebra.

Sources of Influence on Teacher Practice

The teachers in the Michigan sample reported a number of different influences on the content and methods of their reading and mathematics instruction, including the text and instructional materials (math), state test (math), other teachers, student interests and needs, and the teachers' knowledge of topics, and beliefs about the importance of topics. Most of the teachers in the study reported they have a great deal of flexibility in what they teach and how they teach in their classrooms: "...teachers can do their own thing and no one checks up on them. The district has curriculum guides that it provides...but teachers don't look at it. There is a general idea of what you are expected to cover." However, teachers' instructional practices do appear to be related to the extent to which teachers are encouraged, even allowed, to experiment with different instructional techniques.

Reading

Reading instruction at the elementary level differs considerably across the two districts in the study. In the school we visited in MI1, school policy and practice in reading has been influenced by their participation as a PDS. The overall goal in reading instruction is to move away from isolating reading as a separate instructional area to incorporating it with other content areas and writing to be more "literacy" oriented. The emphasis in reading instruction has also shifted from "decoding words to understanding." While the district has an adopted text book, only about 25 percent of the teachers in the upper elementary grades report using it. The teachers reported that they used other instructional materials, such as trade books, book clubs, SRA [?] and subject area reading an average of 80 percent of the time. One teacher gave the example that "all literacy units grow out of social studies...way of exploring a particular type of literature while learning social studies content...." This emphasis on literacy explains why teachers in grades 3 through 5 spend an average of two hours a day teaching reading. Teachers in this school spread their time across five instructional approaches: comprehension strategies, text types, text features, and responding to reading, and spend half of their instructional time having students work in pairs or doing individual work.

In contrast, elementary reading instruction in MI2 follows district practice. As part of its movement toward whole language, the district recently adopted a literature-based text [Harcourt Brace], and the teachers in the study rely heavily on it. It also moved to the use of whole group instruction, away from the "Joplin" approach to grouping for reading instruction. As a result, two-thirds of the teachers' time is spent in whole class lessons and whole class discussion. All of the teachers interviewed liked the switch to whole language, and all emphasized the goal of having students enjoy reading, as well as learning to read. And the upper primary teachers (fourth/fifth grade) talked about the movement to more thematic instruction, and linking reading and writing. All, however, are looking for the right balance of teaching reading skills and reading for learning. Several teachers also raised concerns about whole group instruction, feeling there are students [slow learners] who are falling through cracks. As a result, the first grade teachers use a combination of whole group instruction and ability groups.

At the junior high school level, where we interviewed eighth grade teachers, instructional practices are teacher-driven, and there was as much variation within schools as across them. In each school we met one teacher who was very reliant on the text, and one teacher who had his or her own vision of what language arts should look like in eighth grade. In one case, the English teacher, a history major, emphasizes integrating reading into other curricular areas, especially into history which he team teaches for three periods a day. In another case, the English teacher has extensive training in the writing process, and both uses and advocates the use of a writing workshop as a way to teach students communication skills.

Math

The impetus for change in mathematics instruction in the elementary school in MI1 is, again, the PDS. Teachers who participate in the mathematics projects are part of a Math Study Group, directed by a professor at MSU. Teachers are given four hours a week of released time to discuss mathematics teaching concepts and how to approach students' mathematics learning problems. There is limited reliance on the mathematics text. Teachers choose instead to use their own materials, or to draw on the NCTM Standards for Curriculum and Evaluation. A mathematics cupboard contains instructional materials that teachers can check out for use in mathematics instruction. Teachers place a heavy emphasis on increasing students' interest in mathematics, learning mathematics concepts, learning how to solve problems and increasing students' awareness of the importance of mathematics in daily life.

In MI2, the elementary school we visited has focused on changing mathematics instruction for the last three years. The first and second grade teachers are implementing a Japanese mathematics program. The others are making a greater use of manipulatives and see their emphasis moving towards a greater use of problem-solving, but still feel their role is to provide foundation skills in computational areas. They would like to see the instruction of the basic computational areas introduced earlier in a student's career, with 3rd graders working on multiplication and division. This acceleration is a thrust of the Japanese mathematics program.

In the two junior high schools in our study, the mathematics curriculum is determined by the mathematics faculty within the school, within the broad guidelines of the district. Both schools have adopted texts they feel are aligned with the NCTM standards and state objectives—Addison Wesley in MI2 and the University of Chicago Program [published by Scott Foresman] in MI1. Both have implemented transition mathematics programs; MI2 has eliminated remedial mathematics classes so it can give all students some exposure to algebra. Teachers in MI1, however, are more reliant on the text than their colleagues in MI2. They argue that they must cover the topics in the text to prepare their students for the next grade.

> Instruction is driven to quite a large extent by the text because kids have to take the next book in the series next year. The high school is depending on our instruction to feed into high school classes. This is a grade 8-12 series. We are stuck in this rut. But teachers had a huge input into the book chosen....If I am driven by a text, I'm glad to be driven by this one.

Although the principals in both schools are emphasizing cross-disciplinary work through the teams, the mathematics teachers in MI1 reported placing only a minor emphasis on integrating mathematics instruction with instruction in other subject areas. In MI2, teachers have begun to develop small (2 to 5 day) interdisciplinary units, but have not yet undertaken real thematic instruction.

The teachers in the sample report that the state test, MEAP, and with it, the state's goals and objectives, have a moderate impact on their mathematics instruction. They appear to support the philosophical basis of MEAP and the instructional direction it is headed in.

> I have a sense of obligation to pay attention to what is in the curriculum guide. Since NCTM came out with the new standards in 1990, it has really drawn my attention to what needs to be done. The State's core curriculum, state's guidelines have a big impact on me because they are important, agree with my philosophy.

They object, however, to the publication of test scores and to the test format. Teachers concurred that high stakes testing will not lead to better teaching and that it may lead to teaching to the test, which is still a multiple choice test that emphasizes getting the correct answer, not the process students use to get the answer. The elementary school teachers we interviewed who teach grades in which MEAP is given spoke of doing MEAP review sessions in the fall, including going over the mechanics of "filling in the ovals." The test had a positive effect in one elementary school: the district suddenly found previously non-existent money to purchase calculators.

Sources of Capacity Building

The teachers in this study identified a variety of sources of capacity-building, such as workshops, weekly staff meetings, professional development school activities, and their fellow teachers. Providers of professional development ranged from regional entities, such as intermediate service districts and math/science centers, and universities, to consultants hired by schools and school districts.

District-Sponsored Professional Development

Both districts have traditionally provided strong financial support for professional development, although this is being reduced due to financial constraints in both communities. MI1 provides six one-half days of district time for professional development. The district typically takes two to four of these half days for district topics designed to initiate teacher awareness of new concepts (e.g., multiculturalism, inclusion, new approaches to reading). In the last two years, district professional development has focused on outcomes—helping teachers understand the change to outcomes-based education and involving them in identifying what outcomes should be.

MI2 recently moved from a centralized approach to professional development to one which emphasizes the need to develop individual teachers. Prior to this year, the district was trying to build a broad knowledge base about the learner-centered classroom. They tied in with the Coalition for Essential Schools, Phil Schectly, OBE programming, Howard Gardner, etc. as a way of giving teachers access to the best thinking in a number of different areas as identified by the district. But teachers complained they were feeling unfocused and needed time to assimilate their new knowledge. In the fall of 1993, small groups of teachers met to identify their needs and goals. These became the basis of the Monday PM initiatives. [See Restructuring Teacher Time below.] The district now brings resource people in to meet the teachers' defined goals. According to a district respondent,

> We have a number of department heads and grade groups but no real experts. I want to see the development of true specialists, give people release time to find out what is happening nationally. Ideally it would be an early elementary, middle grade 4-8, high school person who would be the expert for those groups of students.
>
> The ideal staff development program would be to have teachers identify the area that they would like to become an expert in, then to immerse them in that area, send them to conferences, get literature specific to that area, let them see how geometry is used in the work world, then have them come in and model it in their own classrooms, do peer coaching to assist others. This is also an affordable way to do it....Our job is to facilitate, not to impose conditions.

School-Sponsored Professional Development

In both districts, schools are given a limited number of professional development days and a small professional development budget. These resources are focused primarily on school improvement processes and goals. One elementary school, for example, will use its $1000 professional development budget to hire a consultant on the writing process. In those schools that are undergoing accreditation, staff will use the time to work through the accreditation process.

Expanding Teacher Time

Both districts have taken steps to extend the school year. MI1 took advantage of a state incentive program to extend its school day from 180 to 190 days of student instruction in 1993-94. The district received $1.1 million in additional state aid to implement the program, which also requires teachers to complete 20 hours of professional development during the school year. Under contract, teachers determine how these 20 hours are used, although the district would have preferred that this determination be tied to school improvement plans. Respondents noted, however, that probably 80 percent of these professional development hours were related to school needs, and that about half of the staff used this time for professional development in technology, as district has just invested $3 million in technology upgrades in the schools. Teachers can be paid outside the school day ($18/hour), or given released time (up to three days of substitute time) for these hours. The majority of teachers did their professional development outside the school day.

MI2 funds two-week summer enrichment sessions, where teachers are encouraged to try new instructional techniques, such as multiple intelligence learning strategies, integrated thematic instruction, hands-on experiences and project-focused learning, in a "risk-free" environment. The district's goal in promoting these sessions is two-fold: to increase student retention of learning, and to transfer teaching and learning practices from summer school to the regular school year.

Restructuring Teacher Time

Both districts have also restructured the school day to free one-half day per week for staff/teacher meetings. All teachers in MI2 participate in the Monday PM meetings, which are held mostly at the school level, although teachers across the district meet in grade groups once a month. The Wednesday AM meetings in MI1 are restricted to faculty in the middle and high schools. The superintendent of MI1 would like to expand this half day of professional development to the elementary schools, but parents have opposed the idea because of the lack of child care. In both districts, the one-half day was created by extending the length of the school day the other four days of the week.

The schools determine how most of the half-day sessions will be used, with substantial input from the faculty. One elementary school used its Monday PM to give teachers exposure to different instructional approaches and textbooks in mathematics. The district in which this school is located used some of the afternoon sessions to familiarize staff with the district's new reading series. These presentations were made by representatives of the publisher who then provided follow-up help to the teachers. This year, the district is using one afternoon a month to hold grade group meetings where elementary school staff can discuss issues they face with the new reading program and to discuss ways of assessing student progress. The junior high schools in both districts used their half-day sessions to discuss issues related to the implementation of teaming in their buildings.

A few dilemmas have arisen with the restructured time. First, this has become the only time for staff to meet during the week, so time is used for school administrative matters, as well as those issues more directly related to teaching and learning. Second, teachers commented that the half-days gave them more time together, but not necessarily time to do research, reflect, discuss and decide. They felt the need for more time to work two-on-two or in small groups on instructional issues and problems. At this point [and it is early in their reform], sessions are used for exposure to and exchange of information on strategies, not for working through the strategies. Another issue arose in the junior high schools, where the half-days have replaced common planning periods for some disciplines, like math. As a result, teachers feel they are losing their disciplinary connections.

Professional Development Schools

Both districts have implemented Professional Development Schools in some of their schools. MI1, which works with Michigan State University, has PDS projects in three schools: one elementary school, the junior high school, and the high school. MI2 recently established a PDS in one elementary school in conjunction with Western Michigan University. Although the focus and projects differ across the schools, the PDS activities include research and development activities around a number of themes, the use of university faculty to model "good practice" in classrooms, and the presence of student teachers trained in new instructional techniques. A teacher in the elementary school in MI1 identified her PDS activities as including presentations at conferences (e.g., NCTM) and at MSU classes, writing two chapters for an MCTM monograph on assessment, collaborating with colleagues about mathematics, exploring mathematical activities, creating a video tape on the teaching and learning of mathematics, planning and reflecting on teaching and learning and integrating mathematics within her units. Another teacher wrote:

> Working in a professional development school, I have had four years of special opportunities to work with MSU professors and have current research on curriculum brought into my classroom. I've been given the opportunity to inquire about my own teaching and I've had university profs model teaching for conceptual understanding and model ways to develop scientific communities in my class. I am very lucky!

The junior high school in MI1 only recently established a PDS. The principal reported that nearly all the faculty in the school were involved in one of nine PDS activities, which focused on building innovations in social studies and mathematics (alternative assessments in math), new ways of teaching literature and writing (reading/writing workshops) and studying the experiences of students as they go through the day. The mathematics teachers like the PDS project.

> The math project has helped all the math teachers. We talk about things we haven't had time to talk about before. We would have done the same things anyway, but the PDS has given us the time and monetary resources to do things....For me personally, I think more about my teaching. Mostly at the Wednesday morning meetings, which are not always PDS. Gives me more time in contact with colleagues.

Teachers in the elementary school in MI1 are given four hours of released time a day to work on their projects; staff in the junior high school receive one period a day of released time. Both schools receive about $50,000 a year to support this released time, professional development activities outside the school (including conference attendance), and other activities.

There is concern in both PDS schools in MI1 about the direction PDS will take in the future. MSU is devoting more of its resources to teacher training, especially with the implementation of a five-year teacher preparation program. On junior high school teacher noted:

> They are struggling with this [what the PDS is trying to accomplish] right now at MSU. In our view, the purposes are to improve teaching and learning by giving teachers the time, resources to develop new ways of teaching and to learn things that others have done that have been successful. Will they change this to focus on new teacher training and getting teachers involved in this?

Another issue arose in one of the elementary schools was whether the school could or should require all teachers to participate in PDS activities. In this school, some teachers were interested in participating, while others were not. One of the teachers who had originally participated in one of the PDS projects decided to drop out because of a perceived emphasis on the role of teachers as "researchers." The president of the district's teacher union, which fought mandatory participation, feels that reform efforts will be more successful if teacher involvement is voluntary.

Peer Coaching

MI2 has implemented a system of peer coaching this year as one component of its Quality program. With the support of the Joyce Foundation, the district has trained 24 teachers in the principles of Quality. Quality coaches have developed a system of examining how they teach and how students learn. Teachers volunteer to have peer coaches, as an option for their annual evaluation. As one teacher explained:

> [We] make guidelines for ourselves. e.g., observe a child and see how much he is on task. They [observe] my reaction to a certain child, if children are working in groups cooperatively...and then we meet back together. Then I get input....I identify my own needs. I might try something new, and see how students are interrelating. [This] provides a second set of eyes to see the impact.

Peer coaches are given released time, and a substitute covers the teacher's room so they have time to meet. District staff view the use of peer coaches as a way to assist individual teachers in their instruction.

> Curriculum issues are directly reflected in peer coaching. It's a way to get them [the teachers] to trust their peers, then you can get into the content areas. Peer coaching is consistent with the approach of "teach a piece, coach a piece, model a piece." You can't just go in there and do an inservice and then say, "see you next year."

Opportunities for Interdisciplinary Teaching

The junior high schools in both MI1 and MI2 have recently instituted teaming: in both grades (7 and 8) in MI2, and in the eighth grade in MI1 (where the junior high school serves grades 8 and 9). Both schools are struggling with organizational issues at this point; little has been developed in the way of interdisciplinary curriculum, beyond a few team-based theme units.

Teacher-Selected Professional Development

Both districts support additional professional development, through released time, or through programs like Eisenhower-funded programs in mathematics and science offered at the ISD. In MI1, participation in professional development was averaging 10 days per teacher per year three years ago, but has been reduced to three to four days because of fiscal constraints. In MI2, teachers are encouraged and supported to attend out-of-district workshops. Many of the teachers in both districts mentioned attending MDE/MCTM-sponsored mathematics workshops, offered by the local ISD or math/science center: Michigan Mathematics Inservice Project (for elementary grades) and Making Mathematics Accessible for All (for middle school). In addition, some teachers are involved in the Middle Grades Math Project, based at MSU. Others mentioned attending workshops at the annual MCTM meeting on problem-solving and using the graphic calculator. One teacher noted she uses a lot of ideas from the conferences. She finds they fit the new goals, so she doesn't have to use her own time to develop these ideas and new units. With regard to reading, teachers mentioned turning to the Michigan Reading Council and Language Arts Association annual meetings, as well as summer writing workshops at MSU and workshops run by the Illinois Writing Project (the Walloon Institute). Teachers in MI2 attended an ISD-sponsored language arts workshop that was based on the MEAP and stressed writing.

Teacher Support

Teachers also turn to each other for help and support. (Almost every teacher interviewed first mentioned other teachers in their building as the person they would turn to when they needed help.) In one elementary school, the primary source of assistance in reading is the half-time reading consultant and the learning disabilities teacher. The first grade teachers were given a common planning period to ease the implementation of their new mathematics curriculum. Several teachers in this building commented on the willingness and ability of teachers in the school to work together. They look to each other for help in implementing different instructional strategies, recognizing who has developed expertise through training and experience. In the words of one teacher,

> A school building's teaching personnel need to have a trust with each other in order to do their job in the classroom. I would feel comfortable with any of the teachers in the building. I feel that the building progresses the way it does because of that camaraderie. Teachers shouldn't become isolated in their own classroom, because if they don't share, it really hurts the students because they don't see our camaraderie. We shouldn't pit teachers against each other for recognition. We have to show the kids cooperation, because I see the kids talking negatively to each other.

The move to teaming at the junior high level has had a positive impact on collaboration and teacher support. The process of deciding to go to teaming was highly collaborative and involved teachers, administrators, parents and community members. Once implemented, teaming enabled the academic subject teachers to align their classes to pursue themes. Classes are not "isolated anymore, you have a lot of dialogue and coordination." Although teaming is seen as primarily positive, one drawback has been that teachers do not have the opportunity to interact as much with the teachers on other teams, and elective teachers do not participate in all the meetings with the core subject teachers.

Meeting Teachers' Needs

In some cases, a mix of different capacity-building activities appears to have met the needs of the teachers. The department chair of the junior high school in one district told us:

> I feel our department is close knit. We have strong agreement as to what the curriculum should be and where it should go. All of us have been involved in writing the district [math] outcomes. We have been active in MCTM in terms of professional literature, reading what is being published. We have written a grant, attended math conferences and workshops, are part of the Calhoun County math network. We discuss math issues such as MEAP assessment, outcomes, and teaching strategies.

In most other cases, teachers identified four areas of need: (1) time to partake in all of the professional development activities available to them; (2) time to reflect on their practice and concentrate on their own learning; (3) time to plan high quality lessons; and (4) sufficient resources to facilitate good teaching.

Few teachers noted a lack of professional development opportunities. One elementary teacher we interviewed was on a waiting list for the MMIP workshop; her district is limited in the number of staff it can send each year. Another teacher in that school noted the need for more training in reading. Most teachers, however, felt they had adequate access to professional development, but not enough time to participate. This comment was heard most often in MI1, which had reduced its support of teacher-initiated professional development from an average of ten days a year to three or four days a year. A few teachers mentioned they were unwilling or unable (for family reasons) to participate in summer workshops.

Most of the teachers felt they had too little time to reflect on the new ideas they learned in workshops and/or on changes in their instructional practice.

> [We] are trying to do a lot of things that will make good changes, but not enough to pull it together. We are more scattered. Maybe that is part of change.
>
> The problem is that you get all these good ideas and then they sit on the side table, waiting for you to have time.
>
> It's scary for teachers to look at somebody like ______ and say that they can't do that [her teaching style and skill], and they are right. You can't just watch it one day and go back and do it the next....

Elementary school teachers complained about the lack of time to plan new lessons. This comment was heard more frequently in the PDS school, where teachers are working to change their instruction in several curricular areas and are developing many of the new materials on their own. One teacher commented, in response to the pressure from a PDS experience:

> They were very anti-textbook, but when you teach seven or eight subjects every day, you can't be flying by the seat of your pants in every subject. They could demonstrate not using the text book, but they were not teaching full time, they had a lot of time to prepare...planning time becomes an issue, you can only do so much.

Junior high school teachers desired more time to collaborate with other teachers in their disciplines, in addition to the time scheduled for them to meet with their team members. In one junior high school, where teachers' planning time is now used for team planning, the mathematics department put together a folder containing teaching ideas that all department members could access. This also served as a way for department members to communicate what they had learned at different conferences and workshops.

Teachers feel that additional time is necessary, but not sufficient, to support reform of their teaching. Across the four schools they identified other resources they need to support them. These included a mathematics consultant in one district (where the teacher consultant position had been eliminated), special education teachers to assist classroom teachers in inclusion classrooms, counselors to help children deal with social/emotional problems, and smaller classes. The junior high school teachers noted that their classes of around 30 students were too large to facilitate mathematics projects and peer editing in language arts classes.

Factors Facilitating Change

We have identified five factors that facilitated reform and capacity-building in the two Michigan districts: (1) a positive culture for change in the district; (2) a positive culture for professional development; (3) increased teacher involvement in decision-making; (4) increased time for teacher change; and (5) support of the community and teachers' union.

Both districts have created a culture for change through their restructuring initiatives. The districts' vision of change includes the empowerment of teachers and other stakeholders, the devolution of authority for making curricular/instructional decisions to the building level, an emphasis on the use of research to make decisions, increased attention to higher standards for students, and the learner as the central focus of reform. The central office encourages and supports school staff to research and implement new ideas and programs through their school improvement planning process, and has provided opportunities for staff to undertake these activities through restructured time, extended time, and other initiatives. Principals, in turn, have created an environment where teachers feel free to be risk-takers. They have a great deal of respect for their teachers and their need for time to learn. The principal tries to help the staff realize their goals and acts as a facilitator. The teachers commented that they benefit from talking to each other, and modeling good teaching practices so that they can learn from each others' experiences.

The districts also offer financial and philosophical support for professional development. District leaders value professional development and spend well above average to support it. The districts seek out grants from the state and from foundations, as well as drawing on local resources, to support these activities. MI1, for example, has generated numerous grants—$1.1 million in Extended School Year funds, funding for three PDS schools, and Section 90 funds to support teaming in the junior high school. Teachers can get mini-grants through the ISD and the newly formed district Education Foundation. In addition to the contracted district and school staff development days, the district will support another three to four days of teacher-selected professional development time. MI2 estimates that it spends about four percent of its budget on professional development, including support for its restructuring coordinator. This comes to about $250 per student.

Restructuring has increased teacher involvement in decision-making at all levels of the system. Teachers are involved in setting district goals, developing student outcomes at the district and school levels, establishing school goals and determining the use of professional development time at the school level. In the words of one teacher, "You are encouraged to follow through on your legitimate interests, not top down. The superintendent is concerned with making high quality decisions with the whole staff." This involvement has a number of benefits. First, staff who participate in the development of curricular outcomes are given exposure to state goals and objectives and to the most current research in an academic area. It also gives them an opportunity to compare their practice, and the practice of others, with what is considered "best practice" in the field. Second, staff have begun to work on articulating curriculum across the grade levels. While goals are fleshed out by grade span, committees working on grade-level objectives have begun to include teachers from lower and higher grade levels to insure articulation. Third, teachers develop ownership of, and commitment to, the goals they establish at both the district and school level. Finally, teachers have begun to relate professional development activities to personal, school and district goals and objectives.

There is a flip-side to teacher empowerment, however. While expanding teacher input into decisions, both districts have the final say about text book adoption, the use of district professional development days, assessment, and so forth. When teachers do not agree with the district's decisions in these areas, they feel that their input has been disregarded. The teachers in one district feel they have more input at the school, than at the district, level, in large part because of the move to site-based management (and school improvement plan development) and in part because of the leadership of their principal.

A major factor supporting teacher change is an increase in the amount of time available to teachers for some form of professional development. As discussed throughout this case study, these include the restructured school day, the extended school year, and considerable amounts of released time in the PDS schools. The restructured time and Extended School Year programs give staff an opportunity to work with others, to focus on issues, do visitations, and discuss implementation issues, and provides incentives to learn about topics a teacher may not ordinarily pursue. Many teachers in MI1, for example, used their extended school year professional development time to learn more about computers and their applications in the classroom, enabling them to take advantage of a large infusion of technology in their schools. The PDS experience has given teachers access to university professors and preservice teachers who bring new ideas into the school and it provides the time for teachers to meet as a group to discuss teaching and assessment strategies.

Finally, change is not easy, if even possible, without the support of the community and the union. The superintendent of one district initiated his restructuring efforts with a community-wide planning committee, composed of nine community members, seven teacher union members, the seven principals and one support staff. This committee evolved into the district Oversight Committee, and reviews proposed plans and projects and serves as a vehicle for community input. The Oversight Committee, rather than the superintendent, makes recommendations to the local board of education concerning restructuring, including variances in policies and contracts. The community has supported restructured time, and the union has written "letters of agreement" to allow for the required changes in the teachers' contract.

Factors Inhibiting Change

The major factors inhibiting change and capacity-building are time and resources. Time is a problem in both a temporal and quantity sense. First, teachers feel that the time lines for implementing change are unrealistic. They cited a lack of planning time and having too many changes thrown at them at once. The state is perceived as being in the "sanction mode," punishing schools that are not where they are expected to be, as opposed to rewarding those schools that are making progress. There is an underlying feeling that much of the state policy is based on the fact that the state does not trust teachers. This lack of trust is internalized by teachers, as is the "teacher bashing" that goes on in the legislature and governor's office.

Second, teachers want more time to work on instructional issues and problems. They concurred that the school day is not set up to respect teachers' needs to learn in order to improve their practice. There is no time during the school day for teacher development, and taking teachers out of the classroom shortchanges students. Restructured time was identified as being important, but insufficient to cover all of the issues and problems that they needed to work out. Teachers saw their restructured time as a valid way of freeing time to plan and implement programs, but not necessarily time to do research, reflect, discuss and make decisions. They also raised a broader concern about the lack of time. They wanted more time for all of their activities, including time to communicate about their professional development experiences

> There is so much to be done. There are so many needs and not enough time. You must build a culture, innovations like teaming. Then there's the North Central requirements and the Public Act 25 requirements, school discipline, parent involvement. It's hard to do everything well.

Then there is the issue of resources. Although these districts spend above average on professional development, including their support of restructured time and the extended school year, it is not enough to reach all teachers in all schools. Districts must rely on outside grants—increasingly from the private sector—to finance these changes. Programs like PDS and extended school year are very costly. The cost per student of a professional development school program is about $150, and the state gives districts an additional $200 per student for the extended school year. In addition, teachers identified non-fiscal resources, like class size and lack of support services, that limit their ability to implement new teaching strategies.

The teachers also are concerned about the level of community support. There is no half day for professional development at the elementary level in one district because parents opposed it, due to child care considerations. The Superintendent noted that it was a mistake to make this a school by school decision, rather than taking it district-wide.

In MI1, the union has become involved in several areas that affect capacity for change. It questioned involvement in the PDS as it related to the requirements of the teachers contract; they did not believe that a teacher should be terminated if he or she decided not to participate in their school's PDS project. The union also resisted the district's desire that the 20 hours of professional development, required as a result of the Extended School Year Program, be specific to school or district goals.

Discussion

Implications for Reform

The findings reported in this case study of Michigan have several implications for the reform of mathematics and reading education.

First, state policy provided an impetus for teachers, schools and school districts to reform their teaching of mathematics and reading in Michigan. The initial impetus for changing curriculum and instruction in local school districts was the state's low stakes testing program. Over the last four years, the objectives underlying the assessment were embodied in a state core curriculum and now in state standards and curriculum frameworks, and a high stakes test has been legislated. The requirement that school districts incorporate these goals and objectives in their own curriculum (Public Act 25 and Public Act 335) led the two school districts in this study to review and revise, and in many cases to develop, curriculum in core academic areas. The requirement that students pass a tenth grade test for a state-endorsed diploma made the MEAP test (and its successor) a more important aspect of teachers' professional lives. The annual report and school improvement planning requirements of Public Act 25 gave schools and teachers a larger role in curricular, instructional and professional development decisions.

Second, state policy instruments can be used to inform changes in instruction, but they must send a consistent message and be in line with what educators are hearing from other sources. In Michigan, the primary source of guidance has been the MEAP and the Essential Goals and Objectives which underlie the assessment. These goals and objectives reflect current research and practice in the teaching of mathematics and reading, so they reinforce what teachers read, see and hear in their professional journals and in workshops about mathematics and reading instruction. The major disjuncture between the test and "best practice" is the multiple choice format of the test. This may be addressed if the new high school proficiency test incorporates some performance tasks. Within districts, goals and objectives are communicated to teachers through reviews of the MEAP, textbooks, and to a lesser extent through district curriculum guides and district workshops. Teacher participation in district curriculum committees has been a powerful source of learning for those involved.

Third, reform requires leadership at all levels of the system. In the our two districts, district leadership drove and shaped reform efforts at the district and building levels. The two superintendents initiated structural reform, identified sources of information on reform activities in curricular areas, raised outside funds to support expanded professional development, encouraged school staff to be risk-takers, and tried to select school principals who would serve as change agents in their buildings. Leadership was just as critical at the building level. The principals worked with staff to identify building goals and relate school-level professional development and other school-based activities to these goals. The principals also encouraged their staff to be risk-takers and created an environment that supported innovation.

Fourth, reform takes time and resources. Teachers reported they need time to learn about research and new approaches, and time to apply new techniques and reflect on their changed practice. Teachers also need dedicated time for research and reflection. The half-day a week dedicated to staff development was a good start, but all the other administrative issues of the school begin to impinge on this time. The half-days provided an opportunity to introduce teachers to new strategies, and to do school-level planning, but it was not adequate for reflection and research. The PDS structure in one of our study districts gave teachers released time throughout the day so they could work together on common issues, see modeling of best practice, and reflect on their experiences, etc. However, the PDS's in these two districts were expensive—about $150/student. The new state aid for professional development is 3 percent of that, about $5/student.

Fifth, resources include not only support for teachers, but instructional resources to facilitate their teaching. This was not a major problem in these two middle income communities, but average class sizes were large, limiting teachers' abilities to implement group projects and peer editing. Teachers also felt the need for additional support from student support personnel, such as special education teachers and counselors and from curriculum specialists.

Sixth, reform requires the support of both the community and the unions. Educators can build this support, but it takes time and extensive effort. The work paid off in our two districts, where community support has led to stability of leadership and the willingness to tolerate innovation.

Finally, restructuring is not sufficient to the reform of teaching and learning. In these two districts, restructuring was a process designed to change power relationships and the way decisions are made. It is important to empower teachers, but these changes didn't address issues of curriculum and instruction directly.

Implications for Capacity Building

On the supply side, there appeared to be sufficient training opportunities in mathematics in our two districts that introduced teachers to reform objectives and strategies. [It is hard to judge the adequacy of reading support, because the state had undergone a major reform in the late 1980s, which included extensive training of teachers.] But, the professional development opportunities generally did not extend beyond these kinds of workshops. Teachers were exposed to different teaching strategies and new materials, but they were not immersed in new curricular and instructional approaches. Nor were there any mechanisms, time or resources for teachers to try out new ideas, reflect on their new knowledge, and exchange ideas and experiences with other teachers. The PDS groups are a start at this, but are they are expensive to support.

The communication of research and new strategies to teachers was facilitated by the close working relationship between professional associations and the State Department of Education in designing and implementing inservice activities in mathematics and reading. This collaboration is facilitated by the active involvement of SEA curriculum specialists in professional associations and the work of professional association members in the design of curriculum goals and objectives, assessment frameworks, and curriculum standards at the state level.

In the midst of all the activity in the two districts, we found a lack of personal plans for professional development. While teachers were taking some professional development related to new ways of teaching mathematics and reading, their own interests, or other priorities of the school and district (e.g., technology) drove other selections. The experiences of MI1 also show the difficulty of developing policies that tie personal professional development to the goals of schools and districts.

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Chapter 3

Portfolios as a Focus for Capacity Building: Systemic Reform in Vermont

Robert E. Floden

State Reform Efforts

Context

People in Vermont repeatedly remind you that this is a small state, especially in population. Its small scale means both that actors in state education circles tend to know each other and that support from outside sources goes much farther than it would in a large state. Vermont's 1991 population was 567,000. Its public school K-12 enrollment was about 105,000, spread across some 279 school districts with school boards.

Vermont's school population is diverse in income and in special needs, but not in the standard categories of race and ethnicity. Across supervisory unions, the median percentage of children on free and reduced lunch was 24 percent, with one district reporting 48 percent. This is better than the national average of 37 percent, but represents substantial areas of rural poverty. Vermont enrolls 10.9 percent of its students in special education, compared to a national average of 9.9 percent. With 81 percent of these students served in the regular classroom, Vermont leads the nation in its percentage of inclusion. The percentage of students in special education has been declining, running contrary to national trends. The population of Vermont is almost exclusively white.

Vermont is a rural state. Burlington is its largest city, with some 40,000 inhabitants. Two-thirds of the population lives in a small town or rural area. Thus the relatively small population of the state is spread out geographically, with the mountains and weather that often isolate some schools from the larger towns and the state capital.

Arguments for the state's education reforms often refer to the need to prepare Vermonters for different sorts of jobs. Jobs in the textile mills have long since moved south. The various land-based industries (marble quarrying, dairy farming, logging) offer little hope for economic growth. Tourism continues as a major economic base, but is sensitive to general economic conditions. Much is made of the possibilities for high-tech industries, which could be attracted by a well-educated work force. Some such corporate expansion is evident in the Burlington area.

Despite these economic problems, Vermont is still in the middle of the pack in personal income, with above average investments in education. At $18,269, per capita personal income in Vermont was slightly below the 1991 average of $19,683. Average education revenue per student was $6,384 for 1991-2, more than 20 percent above the national average of $5,010. Those average figures hide dramatic disparities. More than 10 percent of Vermont's children live in households below the poverty line. Across the 60 supervisory unions, average per pupil spending varied from $3,591 to $6,286. Average teacher salaries varied from $27,343 to $45,435. The disparity in funding is an extremely salient political issue, capturing most of the legislature's discussions of education.

Funding for K-12 education has increased dramatically in Vermont over the past 15 years. Constant-dollar, per-pupil expenditures increased by about 50 percent in the decade between 1981 and 1991, then leveled off. Teachers' salaries have increased to a lesser extent. From 1986 to 1992, Vermont moved from 26th in the nation to 21st, with an average teacher salary of $33,646.

The education of Vermont's adults also shows some wide disparities. Between the 1980 and 1990 census, the percentage of Vermont adults with a high school degree or equivalent rose from 71 percent to 81 percent and the percent of college graduates rose from 19 percent to 24 percent. Yet the Vermont adult illiteracy rate is estimated to be approximately 10 percent. The percent of Vermont high school graduates who took the Scholastic Aptitude Test (SAT) in 1992-93 was also high, 68 percent, far above the national average of 43 percent. Vermont students scored slightly above the national average on the SAT's verbal section in 1992-93, while scoring lower than the national average on the mathematical section.

State Strategy for Systemic Reform

Theory of Change

Interviews with members of the State Department of Education, together with the actions they have taken over the past few years, suggest that they embrace a theory about change in the educational system in which the following elements are central:

- Change should be oriented toward results.
- State policies should provide consistent, but general, guidelines.
- Widespread public support is important, both for setting general directions and for making local decisions.
- All interested groups should realize that change will take time and support.

Results Orientation. A "results" orientation is evident in the policies established by the SDE. This fits with the Chief State School Officer's (CSSO) emphasis on Total Quality Management (TQM) as the philosophy he expects to have guide the SDE. The SDE recently held a 5-day internal seminar on the principles of TQM, and the CSSO carries a card listing key TQM principles. One central feature of TQM is its focus on results as a basis for guiding operation. Guidelines are established for the results that are expected and statistical procedures are then used to decide whether results are within the expected range. A large departure from the target results is a signal that something needs to change. For state reform, the expectation is that the results of education should be measured, with adjustments in the system made based on a consideration of those results.

The CSSO is explicit about having his staff use TQM principles. A look at the policies that the SDE has helped establish strongly suggests that they believe a results orientation will help to foster desirable changes in Vermont's educational system. The activities first set in motion by this CSSO were an assessment program, in which the results of assessment could be easy to understand and authentically represent overall goals, and a general statement of the goals of Vermont's education, published as the Common Core.

By starting with a state-wide authentic assessment, the SDE signaled its emphasis on what students can do. The use of a portfolio approach to assessment put results in the forefront, because the work in the portfolios is intended to be seen as authentic examples of the results of schooling. Rather than multiple choice test items that are predictors or indicators of the "real" things that students might be able to do, the work in the portfolios is meant to be closer to the real work itself. That is, the writing portfolios contain actual pieces of written work, not merely test scores that suggest what students might be able to write. The mathematics portfolios contain examples of the thinking students do when solving problems, rather than scores that are thought to predict success in solving problems. Beginning change efforts with an authentic assessment focuses attention on the results that schools are achieving, in a format that allows teachers and the public to consider whether these are the results that are desired.

A results orientation is also evident in the new policies for teacher certification and program approval. Under the previous system, approval of teacher education programs and certification and re-certification of teachers was based on process criteria: Did the teacher take enough credits? Did the program offer courses with the right emphases? Did the prospective teacher complete the required course work? All these processes have been changed to reflect greater emphasis on what results the person or the program achieved. For example, teacher education program approval now relies heavily on examination of portfolios compiled by students in the program. These portfolios represent the accomplishments of the student, hence represent the results of participation in the program. One might argue that some of the these "results" come from things the students could already do, rather than indicating a change *produced* by the program. But at least it is a measure of what those coming from the program can do, rather than merely a certification of the experiences they have had.

State Policies as Consistent, General Guidelines. in interviews at the SDE, almost everyone made a point of saying that "you can't mandate change" or that "mandate is a dirty word in Vermont." Hence the SDE believes that change must be promoted by promotion of a general direction for change, not by insisting on a specific curriculum or instructional approach. Thus guidance in the form of a general educational goals like the Common Core or even the curriculum frameworks under development should allow latitude for local adaptation if change is to occur. These frameworks are intended to be a bridge between national standards, the Common Core, and what the locals are doing. Local curriculum is "sacred ground." One SDE staff member said that only a minority of districts are sophisticated enough to define curriculum for themselves. The majority of districts don't have that level of sophistication, but still don't want anyone to tell them what to do. Thus efforts to promote change must provide enough guidance to get the districts to the point where they can improve their curriculum, without making it seem that the SDE is telling them what to do.

As stated in the SDE's pamphlet on the agenda for change, "A Green Mountain Challenge: Very High Skills for Every Student; No Exceptions, No Excuses":

> Each goal is supported by a number of state-wide activities, but the real promise lies in local action along similar lines. Vermont's overall approach is to combine local action and statewide action; to use the goals, targets and strategies to support people in every community who are committed to improving education. (p. 5)

As suggested in this statement, promotion of change cannot go too far in the direction of local options, because those in the SDE believe that the reform will fail unless all the separate efforts are moving in the same general direction. The issue of "alignment" is seen as critical. Unless people see all the activities going on as pieces of a common effort, the danger of "burn-out" is acute. As one SDE staff member put it, being is Vermont is like being at a buffet where everything looks good. Then someone says that you have to eat it all. For Vermont, the Common Core serves as the touchstone. All change should be aimed at achieving those general goals. The Common Core is the "North Star" by which activities should be guided.

Another metaphor was used to describe the sense that more effort to achieve alignment is probably needed for the reform to succeed:

> Someone used the metaphor of standing on a hill, watching five trains move on parallel tracks. The person can see that as the trains come around the hill, there will only be room for one train on the other side, but can't see how the tracks and switches come together to flow into this single tract. In Vermont, the trains are things like the Common Core, the assessment program, NASDC, New Standards, School to Work Transition, Success by 6. The danger is that competition among these different efforts will dilute impact. But the bigger problem is that people will burn up. People in the department have to show those engaged in the various efforts how it all fits together.

Public Support. Those in the SDE feel that reform cannot be something that only involves those who work in education. To be a success, the reforms must have community support. Indeed, sometimes public pressure for change will be a force that pushes schools in a new direction.

At the end of our interview with the CSSO, he added that:

> One area we didn't talk about was public engagement. For the reform to work, you either need public funds or you need public permission to let teachers out of the classroom. The public has to be engaged and feel that they are the ones that are calling for these changes.

This emphasis on public support is stated clearly in "A Green Mountain Challenge":

> There is no substitute for an involved public. A demanding and involved public can help Vermont reach world class standards of quality in education. We have already seen the power of this involvement. Parents and other community members helped shape the goals and targets. They also helped reinvent schools for high performance. The public, and especially parents, business and higher education, is now defining the common core of learning. The public must assert high expectations and pay attention to results of student performance in local school reports. (p. 6)

The optimistic tone of this public statement is tempered by a sense that much remains to be done to convince the public of the need for educational reform.

> The situation in Vermont is the same as everywhere else. People don't think there is anything wrong with their own schools. Vermonter's don't realize the challenges they now face. They are too independent. They think, "We are able to survive," and are not really aware of where the economic future lies for Vermont. Vermonter's have always assumed that everyone who wants to work can find a job. The problem is that the jobs aren't there that everyone will be able to find. We [in Vermont] haven't noticed how jobs are disappearing (e.g., at gas stations). That lack of public recognition of the current situation is the biggest barrier to reform. The reluctance of educators to wake up the public comes from the fact that they are being blamed.

Public pressure for change may come if reform efforts identify some schools as being in especially difficult circumstances. For example, member of the SDE have been working on changes in the school approval process that would call for rating schools. If a school didn't meet standards, it would be declared bankrupt. Some in the SDE believed that such a rating system would pressure districts to become more involved in professional development and capacity building.

Time and Support. Like many others in education, those in the Vermont SDE stressed lasting, significant change requires time and support. Individuals at the school level don't have time for the reforms in mathematics and writing. They need time and additional support. At the district level and in the SDE itself, similar problems exist.

Additional financial resources and encouragement from citizens help, but even with such support, change takes time. And time is in short supply.

> Individuals can do it. But they do not have the time needed to do it with the speed that the public...want it done. They can't do it in a time frame that will make everybody happy. When I talk to teachers, what they tell me is not that they can't do it, but that there is a question about when they can do it. And about how they can't do it without additional support or time.

Some time is needed for additional professional development. Time is also needed during the regular school year to work on curriculum, work with students, and talk to other teachers, parents, and other community members. It is not easy to persuade impatient legislators and an impatient public. "Educators currently feel that they are operating under fire. There is a growing public impatience." One SDE staff member used a comparison to business to illustrate how the need for time is accepted elsewhere more than in education: "Business, when it retools, closes down for a couple of weeks. What type of crisis would we be in if we closed down for a couple of weeks to retool?"

Time also needed to build public understanding and support for the reform. As one SDE staff member said, the process of developing the Common Core took 2.5 years, but could have been written in a weekend. They felt, however, that the lengthy process helped to build a general feeling of ownership. They are well aware of recent cases where states threw goals out at the 11th hour, following a sudden, powerful public outcry. They hope that the efforts to establish ownership, time consuming as they are, will prevent something similar from happening in Vermont.

What the SDE Can Do to Promote Change

The staff in the SDE have a keen sense of the limits on their capacity to carry out change. Over the last five years, the agency has shrunk from 148 staff members (including clerical staff) to 130, while at the same time being asked by the State Board and State Legislature to take a more active role.

The SDE has worked to increase its effectiveness through increasing the level of skills of its employees and through extra individual effort. The CSSO believes that the overall capacity within the SDE is growing and that "most people here work brutally hard," putting in long hours and a great deal of time traveling.

But the SDE has also tried to increase its effectiveness in carrying out reform through reorganization, through self-conscious attention to reform priorities, and through selecting types of activities for which it is best suited. These actions seem consistent with the theory of change discussed above.

The SDE has adopted an orientation toward results, as well as other ideas from Total Quality Management. Groups, for example, often hold "stand up meetings," to encourage themselves to finish their business as quickly as possible.

One striking example of the orientation toward results is a departmental self-study of morale. As one might expect, a reduction in staff and reorganization led to a decline in morale. Rather than avoid this problem, the CSSO and his staff repeatedly remind themselves this is a result of their actions that must be taken seriously. A small study of morale was conducted and the results were put up on the bulletin board in the public space in the office area. Rather than putting up a single stapled copy of these results, each page was posted separately—eight to ten pages in all. The analysis of the results, also posted, repeatedly stresses that the drop in morale is widespread and substantial. The CSSO Mills has a copy of these results posted on the wall in his office, and brings this up regularly and asks the managers what they can do to work on this problem.

The reorganization of the SDE was done with the idea of increasing effectiveness on the reform efforts. For example, the state department used to be designed with lots of specialty areas. But now they don't want people who think only about a slice of the pie. They want people who can work with teams and work with teams in schools.

They are also trying to concentrate their efforts on promoting reform, which means not doing everything they have done in the past. Facilitating reform is the SDE's "number one job." They try to get out of everything that doesn't support the reform activities. In that sense, they have lost the capacity to do some things they used to do.

Given their theory of change and their sense of their own capacities, the people in the SDE see their role as projecting a vision for high performance, defining standards and assessments, building partnerships, and engaging the public.

Projecting a Vision. Because it is a small state, the CSSO and his several teams leaders can be very visible in describing the vision of reform. They travel extensively within the state, speaking to a variety of groups. Although they cannot spend enough time in any schools to work through their specific problems, they can remind people of the general orientation presented in the Common Core. Equally important, they can try to help people see how of the various reform activities fit together.

> We don't just pay attention to individual elements of reform. We are trying to work with schools as the point of focus, to see how this all fits together. We are trying to get schools to ask, "Can we get these pieces to all fit together." In the past, many schools have either gone on a time sequence (e.g., curriculum changes this year, organizational changes next, professional development the following year) or have

> just looked at one element (e.g., "We are doing site based management"). There are basically a number of moving parts. We need to figure out how to make them work together.

By keeping up communication about the importance of reform and its general direction, those in the SDE also hope to increase the number of individuals and groups working on the reform effort. The CSSO sees his own role as largely to keep articulating a vision and to keep making the group of participants bigger and more skilled.

Defining Standards and Assessments. A results orientation is of little value without some criteria by which to evaluate the results. The SDE sees one of its key roles as orchestrating the development of Vermont's educational standards and of the assessments tied to those standards. Those in the SDE acknowledge that the reform process got started out of synch, with the first assessments put in place before the curriculum content and standards frameworks would developed. But they are now trying to do the "retrofit" and figure out how the 21 vital results of the Common Core fit with the current assessments.

The initial description of desired outcomes—the 21 vital results—was developed by the SDE through a process that stressed broad involvement. The SDE helped to raise funds and to form the committees to carry out the work for the subsequent development of the curriculum frameworks, with standards for content, performance, and opportunity-to-learn. So the SDE plays a key role in establishing the parameters and defining what the goals are. Through setting up and securing funding for the several committees, they are defining what high student performance would be.

The Common Core was then formally adopted by the State Board of Education. There is a similar expectation for the emerging frameworks. Once these are formal policy, what the state says to the schools is "We don't care how you get there. But if you don't get there, we want to know why." They are trying to peel back the layers of the system, to see what is working and what isn't.

"Frameworks needs to be clear and useful so that locals can define what is needed and SDE can say that there are different ways to do it. SDE should develop materials so that local standard boards can develop plans to figure out what they need to learn and where they may learn it."

Building Partnerships. Since the Vermont SDE has a limited ability to makes changes on its own, it bring various individuals and groups into the effort, and to enhance their abilities to work—individual and together. The CSSO takes this as a personal responsibility, saying that he sees his own role as largely to keep articulating a vision and to keep making the group of participants bigger and more skilled.

In some cases, the partnerships are with groups outside the education profession, especially in the business community. The SDE includes the business community on every part of the design. They have, for example, helped define the goals. In putting together the assessments, people from the business community took them apart and put them back together again, providing advice that was influential in determining the what took shape. Some businesses are going to tell every person going to a job interview that they should bring along their portfolio. The CSSO feels that the business roundtable has been especially helpful, that they have always supported the efforts to change. Thus the SDE has drawn the state business community into work on educational reform, making them a partner in the overall effort.

One particularly important set of partnerships is with the other human service agencies in the state. At the state level, the CSSO has been meeting with his counterpart in the Department of Human Services. Act 230 has provided incentives and opportunities for making similar partnerships between educators and other human service agencies at the community level.

The SDE has also built partnerships among educational groups within the state, in part by encouraging them to find their role in the state reform, in part by helping to write grants to support reform activities. In meeting with various education groups, the Commissioner has encouraged them to make the reform their own, rather than seeing it as something belonging to the SDE or some other group. He feels that he has been successful in this area, getting groups such as educational administrators and guidance counselors to shift from trying to keep the state at bay to asking what role they can play. The CSSO recently went to a state meeting of guidance counselors. They said they wanted to have a role. The CSSO, in the type of response for which he is known, asked them what they were going to do to play a role. They talked about the need to shift follow up with student so that it goes over five years, not just 18 months.

The CSSO sees building partnerships as a form of professional development for these groups. An indirect approach has been to involve them in developing the agenda. As a direct professional development approach, two years ago the SDE decided to "seize the summer of 1992 for professional development." Although there was no new money for this effort, they doubled the amount of professional development done during this summer.

The SDE also builds partnerships by working to get grants. Much of the grant writing is done by people within the SDE. But the work itself is carried out by various people across the state. The CSSO says that the SDE also goes after every grant they can. They use these grants to bring in the best minds from around the country. They thereby expose Vermont educators to research and practice. The result is thus a partnership within the state, and with those outside, bringing additional expertise into the Vermont reforms.

The SDE also helps to build partnerships of varying degrees of permanence and formality among the educators within the state. They established teacher networks to assist with implementation of the performance assessment program, but with the hope that teachers might help each other on a broader range of topics. The SDE creates the situation where these networks can start. "They [the state] puts some money into them and then gets out of the way." The CSSO would look to network leaders for help in improving student learning in mathematics and writing.

The SDE also encourages partnerships among school staff by publicizing some of the efforts to reform Vermont schools. Some of these efforts are supported by small challenge grants from the state; others had other external support or were done with local funds. Then the SDE "puts the spotlight on" these local efforts, giving them lots of visibility and thereby encouraging other schools and districts to get their own projects going. Some of this local publicity comes through the CSSO regular report to the Board, which he turns into a pamphlet and sends to all school leaders. This is "a way of forcing them to teach each other."

Some activities have also been oriented at building partnerships with higher education. A commission of the college presidents was established to revise the approaches for approving programs for teacher education. The SDE is also interested in having higher education take a more active role in research and technical assistance linked to the state reforms.

Engaging the Public. The theme of building partnerships extends to engaging the state citizenry as a whole in supporting the reform. The SDE uses a combination of public meetings and mass media to keep the need for change and the progress toward broadly accepted goals in the public eye. One story often told with the department is how the Common Core grew out of some 50 local public meetings, each of which started "with a blank page." As the CSSO said, for the reform to work, you either need public funds or you need public permission to let teachers out of the classroom. The public has to be engaged and feel that they are the ones that are calling for these changes. You need dozens of techniques like the meetings leading to the Common Core to get public permission to do capacity building.

Broadly distributed publications are another technique use to engage the public. At one point, the SDE put together an insert for the major papers. Each year the SDE puts together a report on "The Condition of Education." The format of the reports vary from year to year, but each is filled with graphs and tables, many of which are explicitly linked to the states goals for education.

Individual Components of Systemic Reform

State Policy

Vermont's systemic reform has major policies in place, in development, or proposed in the following areas:

- state assessment
- teacher education and certification

- curriculum frameworks
- school accreditation
- special education and social services
- school finance

The major components of these policies are sketched here. More detailed descriptions of the policies and their genesis can be found in other publications.

State Assessment. Vermont has a relatively short history of state-wide assessment. There was a brief trial with a multiple-choice test a few years ago, but it was very unpopular. When the CSSO proposed a performance assessment system, it was seen as a very attractive alternative. The multiple -choice exam, borrowed from a nearby state, was thought to test "the wrong things." Performance assessment was seen as a possibility for getting it right. Early on, the State Board showed commitment to using the assessment to improve instruction, rather than only for accountability. The Board gave the Department five years to get the assessment program off the ground. Even after three years, however, the SDE feels a strong press for accountability from the legislature and from the school board.

In 1993-94 the assessment was carried out in mathematics and writing in grades 4 and 8. Each student puts work into a portfolio, which is scored by the classroom teacher using criteria established at the state level. A selected sample of portfolios from each classroom is forwarded to the state for scoring by a state-wide team. To inform teachers about the assessment process and to train them in the scoring rubrics, inservice sessions were held, followed by periodic meetings of regional networks, led by teachers.

This portfolio assessment has received national attention, both positive and negative. On the positive side, it has been seen as a cutting-edge attempt to assessment outcomes that are more in line with national curriculum reforms. On the negative side, a series of RAND studies have documented the difficulties in achieving reliable scoring at the state level. Revisions have been made in the types of work to be put into the portfolio and in some of the scoring rubrics, but high reliability remains elusive.

Teacher Education and Certification. In 1989 the State Board of Education created a State Professional Standards Board to set policy for teacher certification and relicensure, and for teacher education program approval. A majority of the Standards Board members are teachers, with the remaining members representing higher education and other interested groups.

Two major recent changes in teacher education program approval are the addition of a requirement that teachers complete a disciplinary major as part of their teacher education program and a shift to a portfolio-based program review.

The requirement that newly licensed teachers have a "major in liberal arts" was written into a bill enacted by the state legislature. At one point, the legislative language called for requiring a masters' degree, but when a feasibility analysis suggested that this would prove too expensive, the language was hastily rewritten to the form finally approved. Some of those in higher education are dissatisfied with the specific language, because it calls for students to take courses that can be called a "major" (small 'm') in a subject field, rather than requiring students to complete the requirements for an English Major or the like. The result has sometimes been that these majors have been negotiated with the individual departments, asking the question, not "What would be good for teachers?" but "What would a 30-credit major be?" The result of this legislation, however, has been that all teacher preparation programs have had to be redesigned. Those in higher education believe that students' programs have fewer introductory courses, which were eliminated to make room for the "major" as well as the requirements in education. Some groups are now working on the issue of interdisciplinary majors, as this requirement for a major in liberal arts has typically meant a major in a specific discipline, a fact that appears out of sync with the Common Core emphasis on curricular integration. One respondent from higher education noted:

> The Common Core calls for integrated curricula, so one might ask: are we looking at a small number of endorsements? integrated endorsements? Why are we requiring a liberal arts major, when these are in discrete disciplines? The State Board is not quite this far along in their thinking.

Changes for teacher education portfolio-based program approval were first proposed by a separate commission of higher education presidents, then approved by the Standards Board and the SBE. The specific procedures were developed by the Vermont Council of Teacher Educators. As of 1993-94, four programs had been approved using the new process, which is "results-oriented" and program based portfolio review. Each program has had to develop a theme, around which the program is organized. The portfolio for review then has to be built around that theme. As one higher education faculty member puts it:

> It requires every program to graduate students based on what students can do, rather than what we do to them. This is something new for teacher educators. Even the idea that a program should be focused on a theme was something new. A lot of faculty energy went into defining what their program is. But the point is to provide a way of creating information to keep a program current, informed, and changeable.

A team, smaller than used under the previous system, goes on a program approval visit. They examine portfolios of a few students and interview a variety of people. There are two types of interview. In one type, the program comes in with one student and their portfolio, together with that student's cooperating teacher and college supervisor. In the second type of interview, the review team meets with a large group of students without faculty. They are trying to find out things like, "Do students understand the theme?" and "What have they gotten from doing the portfolio?" In the interview with the cooperating teacher, the review committee is trying to find out how good the teacher candidate is at teaching in the classroom. Programs are approved on a six year cycle. This is a transition period, in that the SBE has specified five general areas in which teachers must be prepared, but has not yet eliminated the old competency requirements. Thus, teacher educators are trying to understand how the new system and old system fit together until any possible conflicts are resolved by the state. By 1995, individual teacher education students will have to prepare a portfolio for themselves, which will document how they have achieved the results expected by their program.

There is some agreement among teacher education faculty that the state initiatives were a spark to examine program content and expedited the implementation of portfolio-based programs. "Our department would not have acted so quickly if the state had not acted when it did." Some teacher educators feel that portfolio assessments will help prospective teachers understand what it means to put together a portfolio and will help them understand "how a portfolio uncovers real learning." Other faculty, however, expressed concern over the relationship between the portfolios prospective teachers are expected to prepare and the 4th and 8th grade portfolio assessments. There was a tension between helping prospective teachers understand a more integrated view of portfolio assessment and the state's focus.

> In the second semester of teacher preparation, students do a portfolio assessment, but it has nothing to do with what the state decided; alternative assessment has nothing do with 4th and 8th grade portfolios mandated by the state. Rather, portfolios should be looked at as an integrated part of instruction.

For teacher relicensure, the State Standards Board established a system in which teacher-majority local standards boards have been set up, to make re-licensing decisions for teachers on a seven-year cycle. In the current system, teachers create 7-year plans, to be approved by the local standards board. Every teacher will now have to put together a portfolio and a plan for what they would like to do to improve their instruction over the next seven years. If the teacher's plan is approved, then it would be used as a continuing reference point in considering annual requests for support for professional development (e.g., tuition reimbursement, support to attend a conference).

During 1993-94 the state legislature also considered bills that would have added professional development days, tied to state reform efforts. The number of days was as high as 20 in some versions of the legislation. Teachers would have received some additional pay for these days, but perhaps not at the same rate they have been paid for the regular school year. The main emphasis of the bill was school finance reform. Nothing was enacted in this session of the legislature.

With changes in teacher relicensure, the state has knitted together portfolios at three levels [teacher education programs, prospective teachers, and teachers]. The overall effect may be to create a basis for conversation among teacher educators and prospective and practicing teachers. "Teachers in schools where our students work have been very clear that they have depended on them for information about student portfolios." Teacher education faculty generally have been supportive of policy changes in teacher relicensure and initial certification, and there exists among institutions of higher education "a pretty healthy capacity for supporting change." Changes in teacher certification and relicensure, however, have altered the shape of teacher education in Vermont. Institutions of higher education are adapting.

> The liberal arts major has decreased the role for undergraduate teacher preparation in the state. For in-service education, there are fewer students coming to campus to take individual courses; courses are offered at the behest of the schools.

While the market for preservice programs has diminished, institutions of higher education have shifted to new results-based teacher education programs. As professional development moves away from individual course-taking, they are attempting to develop programs for teachers that are both rigorous and responsive to local needs.

Curriculum Frameworks. As described above, the Common Core of Learning was developed through a process involving broad participation and wide circulation of preliminary drafts. One notable feature of this Common Core is that it is not organized around traditional subject areas. Although this was approved after the assessment system, it is seen as being the statement of results that should guide all other policies.

During 1993-94 three groups were at work on the frameworks that provide a connection between the Common Core and the curriculum decisions that will be made at the local level. These frameworks will include content standards, performance standards, and opportunity-to-learn standards. Consistent with the Common Core, each group includes multiple disciplines. The SDE worked to secure funding for the work of each group. Funding for the mathematics and science group came as part of the NSF SSI. The stated goal is that these frameworks should provide guidance to local districts without being too prescriptive.

School Approval. At present, there are 151 school approval standards, oriented towards resources and processes, rather than results. Legislation was considered that would have rated schools, with a tie to the developing standards. Schools that didn't meet standards might be declared bankrupt. The legislation was not enacted. During 1993-94 members of the SDE we working on revising the school approval standards so that they would be more closely aligned with the state commitment the results described in the Common Core.

Special Education and Social Services. Act 230 is the focal point of state policies related to special education and social services. This act has led to the return of most special needs children to the regular classroom. It also changes the rules which schools must follow in the use of special funds. In the past, money went to programs; now it goes to schools with more flexibility in use. In particular, they can hire core support staff, who can work with all children, rather than only with those identified as having special needs.

The state looked to increase the capacity of schools to help all kids by reducing the categorical nature of how funds were allocated. Rather than tying funding strictly to the count of students in various special needs categories, the state now gives out the special education funds one-third as a block grants, one-third for students with extreme disabilities, one-third based on the wealth of the district. This has reduced the penalty for local districts to identify kids. As a result, the special education count has been reduced by about 17 percent over the past three years, contrary to national trends. School districts have lost some federal funds in the process, but those in the SDE believe that the districts think it is worth it. In very small districts, where the loss of funds has been a problem, the state has provided some additional assistance.

The legislation calls for one percent a year of the special education funds to be spent for professional development. They have been training regular education teachers for work with special kids, in addition to offering professional development for special education teachers.

Those in the state hope to use the 230 model of providing funding for general support—rather than special programs—as an approach to linking education and social services. Community groups would propose to achieve particular results, then would be allowed to use funds across service areas to achieve those results. These efforts are still at an early stage of development, with interest in a few communities.

School Finance. Vermont schools vary dramatically in the level of funding per pupil. As in other states, the state legislature has taken a strong interest in this problem. The legislation developed during 1993-94 would have equalized funding by changing taxation and state subsidies to school districts. Tied to the legislation were two items with significance for systemic reform: an increase in the number of professional development days from the current five per year to as many as twenty, and a provision that those days be related to state education reforms. One version of the bill would have also shifted teachers' contracts from local districts to a statewide contract.

No school finance legislation was enacted.

State Projects

Vermont's SDE has supported participation in externally funded projects, often helping to put together the participants and writing much of the proposal. The effort appears to have paid off: the number and projects and amount of external funds is out of proportion to Vermont's small size. The SDE sees this fund raising as a key part of the reform. As one SDE staff member said, "General fund money all goes to the old stuff." Major projects include:

- NSF Statewide Systemic Initiative. This project, funded at about $2 million per year for five years, is being carried out by a new organization, the Vermont Institute for Science, Mathematics, and Technology (VISMT). Among other things, VISMT is drafting the framework for mathematics, science, and technology and sponsors professional development activities.

- New American Schools Development Corporation (NASDC). Several Vermont schools are involved in the NASDC project run by a consortium. NASDC was created to support the development of "break-the-mold" schools, which might then be replicated in other sites.

- Carnegie middle schools project. Several of Vermont's middle schools have grants from Carnegie to support innovative approaches to the middle school concept. Curricular integration is a key idea in most middle school initiatives, so these activities are seen as connected to the emphasis on integration in the Common Core and the frameworks under development.

- New Standards Project. Vermont has connections to the test development work going on in the New Standards project. The SDE assessment person is state liaison to this effort. Several schools around the state are also involved.

- National Governors Association. The SDE has a small grant from National Governors' Association to work a few states, including California, and New York. This is an opportunity to learn about the experiences with standards in other states. The SDE is also using it to pull together people in Vermont.

- Another project is the Apple Classrooms of Tomorrow. Staff in the SDE believe that the reform agenda needs to include technology.

- A grant from the US Department of Education is being used to fund development of another framework. The third framework development group is being funded by the

- Private resources have been tapped through challenge grants. The CSSO hopes to set up a Vermont Foundation as a way to draw additional financial contributions.

The state also supports teacher networks in mathematics and writing in each of the state's 15 regions. The primary goals of the networks are to disseminate information to teachers about what the assessments are, how to score them, and to share resources, such as mathematics problems teachers can use with students. The focus varies each meeting, but all activities center on the state's portfolio assessments in writing and mathematics. Network leaders are all teachers, though SDE personnel collaborate with network leaders to set meeting agendas and materials. The networks meet 3-4 times a year for half a day without formal follow-up. They are funded by the state and the districts with costs related mainly to substitutes used to cover teachers' release time.

District Reform Efforts

Introduction

The two districts selected in Vermont both have a reputation for their activity in reform. Following the advice of those who nominated districts, we avoided districts in Burlington area because they had an atypical amount of resources—human and financial—readily available. Edwardstown (VT1) was located in the Northeast Kingdom, a region of the state that is known for its geographical isolation. Greenville (VT2) has several rural schools, but also has a number of community members who commute to relatively high-paying jobs in a larger town.

The districts have several areas of similarity. Both have a state college campus nearby, from which their teachers can take some course work. Both are small districts, with only three or four professional staff in the district office. Both are headed by superintendents who have been in their positions for over a decade, but have curriculum coordinators who have been in entered their positions at the same time as the current CSSO or later, that is, who have little history in the district prior to the current set of reforms. And both have a relatively low level of per-pupil funding.

In addition to these contextual similarities, we also found many similarities in the responses of school staff to the state reforms. For clarity of presentation, therefore, we will describe the districts separately, but discuss the major themes that come from the school level perspective for the two districts together, noting any significant differences between the districts as we go.

Edwardstown (VT1)

Context

Edwardstown has one middle school (6-8; enrollment of about 350) and five elementary schools (one 1-5, one K-3, two 3-5, one EEP-2; enrollments of about 110-180). The district, like a number of other Vermont districts, has no secondary school. Instead, the district pays tuition for its students to attend a local private "academy" or some other secondary school. Total student enrollment for 1993-94 was 1,425, including the high school students. 128 students are identified as needing special education.

The district has about 80 professionally certified staff (i.e., teachers and administrators) and 80 support service staff (i.e., special education, Chapter 1, para-professionals, secretaries, custodians, cafeteria staff, bus drivers). There is very little core subject teacher turnover—probably one change per year. This year the retirements were one Physical Education and Health Education teacher (35 years in the district), one Industrial Arts teacher (34 years), and one elementary teacher (36 years). Moreover, people who fill open teaching slots have often worked in the district in other capacities (e.g., teacher aide). The average teacher salary is about $34,000.

The district's budget is about $7.5 million. About half the revenue comes from property tax and other local sources; the other half comes from general state aid and special education and vocational education allocations. About $2.5 million goes for high school tuition. For professional development, the main budget items are tuition reimbursement (about $20,000), staff development (about $2,000), and salary and benefits for the Assistant Superintendent for Curriculum and Instruction (about $40,000 total compensation). Special education costs now make up over 10 percent of the budget. This has increased by about 25 percent over the past three years.

The student population is virtually all white. The area is economically depressed, with the recent loss of a major employer. Main employers in the town are the school district, a hospital, and two government agencies or institutions. The median income in town is $17,000, half the median teacher salary.

District Perspective on Reform

The Edwardstown superintendent sees consistency between district goals and state goals. When asked whether the two coincided, he commented: "Yes. They may have caused the priorities in the district." He believes that "math and science has gained prominence through VISMT and portfolio assessment is at the forefront in the district. We put a lot of staff development into portfolio...." "In this district, we have said that we have to do portfolio from first grade. It has been more an instructional tool than an assessment. It has provided focus and documentation of achievement and needs, not just marking in red and handing it back." "The whole focus of mathematics is [now] problem solving. What is quite different is the emphasis on language, where you have to explain the rationale."

He also offers some good criticisms of how portfolios are used: "Teachers sometimes say, 'we are going to stop doing math and do portfolios.' We need to integrate the portfolio approach into math as a whole. We are good at compartmentalizing...." Also, "We need to get beyond computation to understand difficult concepts in mathematics. Elementary teachers don't understand the math and science concepts well enough to teach them and I'm not optimistic teachers are able to learn them.... Portfolios are a good tool for discussions with parents, but no good for comparison. We'll probably use a national test. People are uncomfortable with Vermont's national report results."

The district curriculum specialist's views are consistent with what the state is trying to do: "establish precise content and learning goals, set broad learning goals, like frameworks, and provide technical assistance to districts involved in new innovative curriculum programs." Moreover, she believes that the district is moving in this direction. "Nothing is out of alignment." "There is a fair level of confidence that [state priorities] are important things" [among all local players]. "The portfolio assessment has had a big effect, and not just on grades 4 and 8." She believes that teachers at other grade levels should understand what portfolio assessment is and what kids are asked to do so that kids in other grades know what they are working towards, though there has been some question about appropriateness of criteria for primary grades, e.g, what can first graders really do to explain their reasoning in mathematics.

The Curriculum Coordinator perceived the State Curriculum Frameworks as an opportunity. "They present the challenge of an interdisciplinary curriculum and an opportunity for being specific in terms of learning opportunities. There has been a real need for this [specificity for learning opportunities], more so than content. Now it's more acceptable to talk about best practices [whereas before] there was a sense that the classroom teacher knew best about the classroom. Now there are agreements about a narrower range of acceptable practices." [Teachers will think of frameworks in terms of] "scope and sequence; instead, it is a description of the big ideas and processes that kids need to have experience with. Scope and sequence would tell you how this plays out."

Community support for curriculum change exists. "There is a fair amount of confidence that these [reforms] are important things. The reluctance to change is a bigger factor than specifics of curriculum."

According to a local school board member, there is a lot of community support for the schools and not much controversy. The funding was cut, as the superintendent notes, but "the cut was due to frustration and some confusion; it did not signal a long term problem." The district should be making gradual, not radical, change: "The district should try to figure out the right things to do with curriculum changes, and keep on a steady, well managed course." The school board member's comments on curriculum matter remained quite general; he did not wish to comment on specifics of mathematics or writing curriculum.

He was skeptical about portfolio assessment. "I am skeptical about portfolio assessment. In the past, we were measuring people by objective standards, but we didn't like the results. Mills has brought in this new system. The only way to get objective results seems to be to move back toward objective standards." He accepts the Curriculum Coordinator's claim that portfolio assessment is influencing instruction, but says that "isn't what assessment should do."

Interaction with Schools

Those in the district office believe that they have a key role in the district's reform effort. The superintendent was clear that, at least in some senses, reform started with him. "Impetus for change comes out of this office." Although he sees a role for the state in setting the general direction of change, change itself must occur at the local level:

> The state doesn't have the personnel to serve the local district. The commissioner has provided the impetus for change and is determined. He's criticized for trying to put up too many balloons at once, but that may be his way of approaching change....

> The [state] is beginning to realize the financial commitment is local not state. (VT1)

He also mentioned that the state does not monitor compliance with state policy in his schools.

The Curriculum Coordinator agrees that the state will be able to give little technical assistance to LEAs for implementing curriculum goals. "They probably won't offer a lot. They probably will to practitioners who have been involved. There obviously will be conferences, some college courses, but not a lot, since there haven't been a lot of university people involved."

The district recently organized a community discussion of core curriculum. The district also has in place curriculum support groups, with representation from all grade levels and each building, including perhaps a special education or Chapter 1 person. The Curriculum Coordinator is the one who works directly with teachers on the curricular matters at the heart of the reform. The Curriculum Coordinator also has final approval on all expenditures for textbooks and other instructional materials. She said that when she came six years ago, people didn't seem to think that they needed to run things by her; now they do.

At times, she spends a lot of time getting professional development arranged. At other times she may work with a support group around an individual student. When she came to the district, she put in quite a bit of time getting the Chapter 1 program off the ground. (She has a half-time technical person who helps her with paperwork.) She has worked on a new supervisory model for the district. She introduces the framework when it comes down and helps teachers to understand what it can and can not do.

The curriculum coordinator also does a bit of instructional supervision. Each elementary school principal in the district is also a teacher. These "teaching principals" have no principal to carry out instructional supervision. The curriculum coordinator fills in and supervises instruction. A short time ago she proposed focusing the supervision on criteria for portfolio assessment. Later, when it came time for her to do the supervision, some of them didn't remember that that was a topic for discussion. The incident suggests that the she would support the idea of giving the reform effort a more prominent place in the regular supervisory process.

The Curriculum Coordinator therefore clearly plays an important role in brokering instructional innovation. Thoughtful about instruction, she seems to enjoy working closely with teachers.

> It is good to talk about issues.... One issue that is interesting to watch is the youngsters' ability to use voice and tone in writing. Developmentally, the question is when this capacity is there. Teachers haven't asked for this in writing, so it is at

> present difficult to know whether the inability is a consequence of students' stage of development or just an absence of teaching.

In describing her role in these discussions, the Curriculum Coordinator pointed out that her joint responsibilities for regular curriculum and Chapter 1 can be an advantage. She does not always make it clear which hat she is wearing. This allows her to use Chapter 1 ideas for the regular classroom as well, e.g., "we have to set measurable goals in Chapter 1, why don't we do it for other students, too?"

She considers it essential that teachers be familiar with national initiatives and model programs. "There should be a lot of professional development so that teachers don't just get a description of what they have been doing for the last 20 years." But it does not pay off to rush people into writing (e.g., writing a committee report). A year ago she got consensus from the second grade teachers that they would not use the standardized test (SAT) and said to teachers, "Now we need to put something together our own. [But] what came out was something traditional." She brought in a consultant who worked with teachers over time to the point where she could bring up once again the idea of teachers constructing their own test.

In general, the Curriculum Coordinator believes that teachers in her district have a good sense of what is important to learn and of hands-on, experimental methods. She also thinks, however, that teachers sometimes do not adequately support instructional change. "The people engaged in the discussion are right on the mark and have a good sense for changes in instruction. What they don't do well is to make the reach to support change—e.g., the science teacher who is trying to do something really different." She also feels that teachers and schools have a lot of discretion in curriculum development and coverage, instructional materials, text selection. "People can ignore it [curriculum development] if they want.... [There is] a lot of leeway [in curriculum coverage and pace]."

Nonetheless, the curriculum coordinator believes that "the district has had a big influx of professional development in terms of hands-on math, buying new texts in middle school. Now elementary teachers are looking for a replacement text. Teachers now look at the text as a resource not as a curriculum."

Supporting Factors

Though the state does not provide a great deal of direct technical assistance to districts, the state facilitates reform by offering direction and information. One school board member believes that the commissioner supports reform by "keeping the focus on what is going on in education. I don't agree with everything, but he is trying to give some direction. What they are doing right now is probably fairly appropriate." Some people worry that the state tells districts what to do, but this school board member does not see this as a problem.

> Trying to set standards is probably helpful.... The state says in effect, if you don't do this, we'll take away your aid. But we don't take state threats seriously; it's politically impossible to take away major aid.

The district supports a range of activities connected to reform with "maybe two-thirds of teachers" involved in some form of staff development. The district does not require course work but encourages it through a program which reimburses teachers for up to six credits a year. The district spent $21,000 on the tuition reimbursement program last year. The district also spent an additional $40,000 to $45,000 on required staff development in-service programs. The district also receives some minor grants in mathematics and science, including funds from VISMT and Eisenhower program. There is no private money.

All teachers in the district attend two and one-half days of in-service per year. To meet the in-service requirement, teachers chose from a variety of 'strands' on topics selected by a staff development committee headed by the district's Assistant Superintendent and based on teacher surveys. There are usually six to eight strands from which teachers choose. Strands included topics on interdisciplinary study, peer practice, independent study, special needs, mainstreaming, the writing process, and wellness. The strand approach has been going on for five years. Prior to this, the inservice content was a central office decision. Leadership for strands now comes from the people who sign up for them. "They search out the resources, people, and materials and decide what the agenda should be."

The strength of the strand approach is that it is informal, permits more follow-up, and is based on teacher needs. A weakness is that it is difficult to do district wide programs, including those focused on state reforms. The Assistant Superintendent, for example, felt that there has been some discussion of portfolios in strands, but not all teachers in all grades hear about it. "The portfolio strand didn't get enough people to sign up, so it was dropped." The Superintendent stated that in-service strands tend to focus on school plans. "This was a problem because schools were turning inward. I took this to the committee and they agreed that this was a problem." And though there is always a staff development strand focused on special education, e.g., teaching emotionally troubled students, not many regular educators sign up for it.

The Assistant Superintendent believes, however, that the state's technical assistance is very good, when it is requested, and that staff development linked to Act 230 has gone well. When teachers had to develop their own policy on meeting the needs of special education students, they formed a committee, developed a policy, and then presented it to the teachers' association and school board. After the policy was approved, teachers got a copy of the policy and procedures which lay out how to deal with the kids. It has forced the teachers not to give up so quickly, to reach harder to meet their needs.

Overall, district staff development receives broad support from administrators, teachers, and school board members, though the Superintendent admitted that "this is sometimes a hard area to maintain." Even with financial cutbacks, a local school board member states that he doesn't think the district should curtail professional development. "It is as important as textbooks."

Barriers

Despite sincere efforts to communicate with those in the field, many people in the districts still feel that they do not know enough about the state reforms. The district's superintendent mentioned that superintendents, in general, feel that they are out of the loop in terms of state's curriculum goals.

> And if we are out of the loop, we have teachers who haven't heard of frameworks. The commissioner has been incredible in distribution, for example his newspaper insert. But it is very difficult to get a discussion on this [because] it is theory, philosophy, and these are not areas that people usually think about.

On the Common Core, the superintendent also commented that the CSSO "keeps talking about the 4000 who worked on it, but I'm not sure those people understand it or even that they worked on it." The school board member had read the Common Core but did not feel that he understood it: "I have a problem reading some of these documents, because when I read them, I'm not sure what they really said." The Assistant Superintendent mentioned that funding is never sufficient, but communication and time is more important. The district's relationship with the state he perceives as implied mandates without state funding, but he needs frameworks and guidelines from the state without everything being specified. "The Commissioner has a lot in mind for reform, many things going on at once. This stuff won't go away if you just ignore it, as some teachers believe."

Communication barriers are sometimes connected to the feeling that the state has too many reform initiatives. The assistant superintendent believes "that there are so many initiatives, it's hard to keep up with them all and know what to focus on. We need to focus on knowing what the state is up to and which bandwagons to jump on." He suggests a monthly newsletter for districts in which the state communicates the status of the initiatives and how they fit together. He also sees a need for larger training opportunities for teachers to meet state requirements, but he feels that this may be impractical. The district's staff development committee had considered devoting their in-service time only to reform initiatives, but this would have meant getting rid of the strands for a year or so and would have required teachers' approval.

Another barrier is the concern that state-driven change efforts would end when grants run out or key personnel change. The superintendent, for example, worries that VISMT, would end up like career education, which was pushed hard and then died. "In five years what will we have [from VISMT]? Will we have better math and science instruction? Will it be a highly organized change in math and science? Or will it a whole number of individual grants that, when they are gone, they are gone, like with career education?"

There is also some sentiment that institutions of higher education are not pulling their weight. "Expectations for what university people are willing to do are at a minimum. The dinosaur there is incredibly slow to change.... Even the state colleges are not interested in transforming education. [There's] no incentive for them to get beyond the four walls of the colleges."

"The district also is struggling with how state policies apply to some students with special needs. Some special education students in the district do not have portfolios. In mathematics, these students have problems read to them and sometimes are not able to complete the required seven pieces for a portfolio. In these circumstances, it is stated on the forms that they are IEP students and can't do the work. There is nothing official from the state on excluding special ed students from the state assessment program. Sometimes an empty portfolio gets sent. I wish the state would establish an official policy."

The district's special education coordinator believes that overall her program fits in well with the mathematics and writing, though she mentioned that writing has been easier to adapt to. She had not heard anything about the state frameworks and felt that the state could better meet the needs of special education students. Her district has implemented a scribe idea for some of these students, but the state has not responded to this innovation.

A major issue facing the district's special education program is the difficulty raised by students with special emotional needs. Both the superintendent and special education coordinator mentioned this issue. Regular education teachers sometimes resist a placement especially if they are not given support. With support, inclusion can work, but "with budget cuts this will be difficult. We may have to cut paraprofessionals. There were lots of incentives four or five years ago which now don't exist." Major obstacles to her program's success included support for students and teachers, teachers' styles of teaching, placements that put the burden of special education students on just a few teachers, and students' behaviors rather than their learning limitations. Teachers need more preparation at institutions of higher education (IHE) and the right incentives to get the professional education needed to better respond to special education students. And, teachers must be more willing to access the support that exists.

Greenville (VT2)

Context

The Greenville Supervisory Union is made up of one high school (9-12), four K-8 primary schools, and a one-room K-6 school. Total student enrollment for the district is about 2,300. The high school enrolls a bit over 450 students; the K-8 schools range in enrollment from about 120 to 520; the one-room school has about 30 students. Each of these schools has its own school board, so that the district superintendent must work with a number of different school boards, each of which pays part of his salary.

The district office professional staff is made up of a superintendent, an assistant superintendent who serves as the curriculum specialist, a director of special services, and a business manager.

Like the other district, the student population is nearly all white. At one time, the area had prosperous quarries, and some the houses in the larger towns are impressive structures from the 19th century. With the decline of that industry, the economy in the town where schools in our sample were located was based on farming and tourism. A number of families in the area are transients. More affluent families, attracted by the region's beauty and recreational opportunities, commute to work in small cities some distance away.

District Perspective On Reform

The Greenville superintendent's attention is largely consumed by financial and management issues, especially in working with the several different school boards which he serves. He has used Chapter 2 funds to create and fund a position for a curriculum specialist, a move widely praised by those in the district. As a result, he has been able to delegate most of the district curriculum work to this curriculum coordinator. To the extent that he has paid attention to state reforms, he does not see them as particularly important for the district or recognize any particular problem with them. "Writing hasn't been a high priority, but I expect to hear more about it.... For years teachers have been involved with the Vermont Writing Process. This was a piece of cake."

One reason the state reform seems a relatively low priority is that "there isn't much state monitoring of curriculum, student and teacher school performance. With accountability, the SDE seems to be focusing on portfolio." And, of course, that assessment process has not been sufficiently reliable to be used as an accountability measure.

Moreover, positive incentives like participation in grant proposals do not seem worth the effort at this point. "We are tired of applying for grants. We don't want to be pigeonholed into restructuring envisioned by the Commissioner. We'll restructure in our own way without the big grants. I'm tired of wasting time on writing grants and all the paper work."

When asked about capacity to carry out reform, he says, "We need inservice related to technology, e.g., word processing...when I think elementary, I'm pretty pleased, but I think teachers need tech training."

When school board members talked about goals, they, like the superintendent had their attention on matters other than the state reform. In their case, the pressing concern is public pressure related to large district costs for some special needs students. In our interview with a group from several school boards, little was mentioned about the state reforms. One person mentioned that teachers had gone to the University of Chicago mathematics training sessions. Others expressed disapproval of the general economic orientation of the state's agenda and the feeling that, despite the SDE emphasis on partnerships and participation, they were just being told what to do. One board member did not feel that the state was addressing the fact that "we are raising citizens not just potential employees." Others said that they wanted the state to provide minimum standards; but they didn't want to feel the "big brother quality" state control now has.

In the interviews in this district, the curriculum specialist was mentioned as a key figure in curriculum change. In setting curriculum directions, he seemed to have much greater salience for those in the district than state activities such as the Common Core or the developing frameworks.

Regarding the curricular integration built into the Common Core and frameworks, the specialist says that they are moving in the same general direction as the state, but are guided by their own vision and by support for these ideas in the broader environment, not tied to the specifics of state reform.

> One of our long-term goals is to merge math and science in a single subject and have elementary school classrooms organized around math and science.... I say to the board: teachers need to develop an allegiance to the process that they feel strongly about so that they will stick with it when the state changes its focus. I say don't pay attention to what the state is doing because they don't know what they're doing. I think the state ought to be a clearinghouse for ideas that come up from locals.... My message to classroom teachers is pick what you are happy about in what you are doing and then tell the state about it.

The district's special education coordinator similarly sees consistency between his general program goals and state reform, but leaves the impression that it is fortunate that the two run in the same direction, rather than that he is being guided by the state. "The goals for my program coincide with district and state goals, and the state is really pushing for high standards for all kids.... An issue however with my program is a decline in resources." In elementary language arts, special education professional development has shifted away from writing. "Professional development for special ed, compensatory ed and ESL teachers is centered around *reading recovery*; not a lot is going on right now [in writing]."

Interaction With Schools

The superintendent has little interaction with schools on curriculum matters. By creating the position of curriculum specialist, however, he has shown that he sees this area as important. He believes that this has been quite successful, with people from the schools looking to this specialist for assistance. He believes that, if teachers need help, "they would not look to the colleges; the most common answer would be to call [the curriculum specialist]."

In sharp contrast to the superintendent and the school board members, the district curriculum specialist speaks in detail about schools' activities in mathematics and writing, including how he thinks about the relationship of those activities to state reform efforts. Speaking about writing, this specialist reported a strong instructional influence of the portfolio assessment requirement, at least in the district's elementary and middle schools. "Our district's response to state initiatives has been in response to portfolios and it's been building based. Some buildings have tried to expand to K-8, and most professional development has been focused on state initiatives. People initially thought that this was intrusive.... At the high school we've run into a turf issue. They are interested in portfolios, but not the state portfolio system.... Portfolios have been around for five years and teachers have really changed."

In mathematics, however, the district's goals seem to be less closely tied to the state reform, though they share an emphasis on teaching for understanding. In the elementary schools "early on we gave out questionnaires and found that early primary teachers didn't know much math...teachers are teaching the doing of math but not the understanding." Some efforts to change mathematics then got started at individual schools. More recently, the specialist has helped to foster interest in Chicago Math (an innovative mathematics program that selected primary teachers examined and chose to work with in their teaching). "What you have is two groups of people, those who have been trying to do the homegrown version and those involved in Chicago Math." The district emphasis is tied to these locally developed or selected reforms, not to the specific standards being developed by the state. Speaking of the curriculum frameworks under development, the specialist said, "If you are a new teacher, you are probably going to live through several administrations. The teachers I'm working with can pay attention locally."

The curriculum specialist has also enlisted the special education coordinator in his efforts to support instructional change, particularly in elementary school mathematics. They have worked extensively with teachers at one school who have been drawing ideas from the "visual math" program and are now trying to understand how they can continue to use those ideas as they adopt Chicago Math as a school. At this school "they are developing assessment based on Chicago Math at the lower levels, developing standards for all kids." "For special needs kids (230 in district), we have to find ways for them to participate...we are just learning about Chicago Math for grades 4-6 and hope it can be integrated.... Visual math will fit, if for nothing else then to push teachers to take a constructivist approach."

Supporting Factors

The superintendent sees the state as playing a somewhat supportive role, perhaps doing as much as they can with the resources they have available. He believes, however, that they have become somewhat less supportive than they were in the past. "The state has provided portfolio training, but this takes place during the school year." "They offer a variety of other things, more like a smorgasbord, but they have not done as much as before because of cutbacks." "You can't fault the SDE because the legislature hasn't given them a lot of money." The special education coordinator who works with regular education teachers also believes that state policy related to special education is designed to support teachers' professional development.

> Act 230 is an act to support instruction. It isn't a kid act. It says that teachers should be provided support to teach all children. This was promoted very well at the state...and has been very effective with everybody but behavior problems.

Act 230 provides for some staff development support for training teachers to work with at-risk students. The amount, however, is relatively small ($4,000), and last year about 20 teachers received training. The district in addition receives staff development support ($12,000) from an Eisenhower grant to help K-8 teachers make curriculum changes in mathematics and science.

The district also supports a variety of staff development activities related to reform. The district spent between $20,000 and $25,000 last year on a tuition reimbursement program. Based on the content of teachers' professional development plans, teachers are reimbursed for taking courses at nearby IHEs. Roughly one-half of the district's teachers participated. The district curriculum specialist also mentioned that local IHEs have been cooperative and provided helpful advice to teachers in the district. Further, the district makes available grants for peer training in the use of instructional technology. The grants range from $3,000 to $5,000, and there are roughly 12 teachers per year involved in the peer training.

Barriers

The superintendent believes one barrier is that the state is sometimes inflexible. He has a current problem with the interpretation of a school program approval standard. A small school has proposed an alternative that seems to them and to the superintendent to meet the spirit of the requirement, but the state has not accepted their proposal. "We just need more flexibility not accountability, the SDE should be helping."

The superintendent also mentioned that, "there is worry that the portfolio will have outlived political value for the Commissioner and be dropped." Likewise, school board members stated that teachers were concerned that the state reforms "would be dropped, like other things in the past." "The teachers don't truly believe the state will continue it."

The district curriculum specialist echoes the sentiments of the superintendent. He tells new teachers that they will probably live through several administrations and therefore what they need to do is pay attention locally. He also stresses the need for parents and other community members to be patient as reforms move slowly forward. "I said to the district board that the big lie is that we could make change quickly if we had the money, [but] things take time."

A significant barrier in this district is the lack of change at the high school level. As the special education coordinator puts it, "People feel better about the writing assessment [than about math assessment] because it's been around. But when kids get really into the writing process, they get to high school where things are much more regimented." The state's lack of technical assistance contributes to the problem. The district special education coordinator believes that the SEA's technical assistance to LEAs for implementing assessment "is minimal and the universities are well behind." "...I heard a teacher talking about how the problems that we are currently using don't allow students to demonstrate what they can do and what they know."

The mismatch between assessment uses and reform goals creates difficulties. The district is required to give students both the Metropolitan Achievement Test (MAT) and the portfolio assessment. The MAT is not closely matched to the state's goals and curricular frameworks, but is used in the administration of compensatory education. The portfolio is not used at all for district needs; i.e., identifying students for categorical programs, promotion, teachers for evaluation or at the school level. According to the special education coordinator, "Portfolios are not all used." When the state scoring of portfolios is done, the reporting does not assist those working locally. The special education coordinator "was disappointed that the Commissioner wound up reporting for individual districts; reporting the single score distorts.... The state just gives back a ranking of where we fit in the state overall. I don't pay much attention; a single number doesn't fit in at all."

And of course funding is always a barrier. The special education coordinator is concerned about the reductions in funding for special education. This reduction is one reason that the school board members are so concerned with increasing cost for some special needs students. And in general, one board member complained that the "state gives less money and tightens the requirements. They don't feel like a partner." Another stated that "I feel alienated from the state.... The state has some really good ideas, [but] mandates continue with no extra funding, only insignificant funding for a large amount of work." And again, "the state should be more realistic about mandates and provide money for them; their role should be one of commitment and support."

Teacher and School Reform Activities

Introduction

In considering how systemic reform and capacity building look from the perspective of those working in the Vermont schools included in our study, the biggest differences are between the two subject areas—writing and mathematics—not between organizational units (schools or districts) or grade level (upper elementary vs. middle school). The results for this level are therefore presented by subject area for each topic, drawing on data from all the schools we studied, and distinguishing schools or districts only when there were important differences there.

The teachers in our study are, for the most part, long-time members of the community. Almost 40 percent of the teachers have 20 or more years of experience, typically in the current school district. The distribution of experience is bimodal, with another 40 percent of the teachers having six to ten years of experience. None of the teachers in our sample has fewer than six years of teaching experience. The teachers are also mostly locally educated. Half of them took their undergraduate degree at the state college located near their district, and another 10 percent got their degrees at the University of Vermont.

What Instruction Looks Like in Writing and Math

Teachers in our sample generally reported writing instruction that fit with the model suggested by portfolio assessment, but in mathematics instruction they were still working to integrate problem solving and communication with other mathematics content.

Teachers also commented in their inclusion of special needs students into their classrooms, a result of Act 230. Overall, the teachers we interviewed did not see making accommodations for such students as requiring much special effort, especially since students with special needs might be accompanied to class by aides who would provide special assistance. It was difficult to tell just how much teachers adjusted their instruction or grading standards for special needs students. Some teachers said that, "I don't think there's been that much of a change" (e.g., VT2), while others spoke of difficulties special students have if material is too difficult for them or accommodations made in grading: "[Inclusion is] not a problem as long as students aren't too far over their heads and have the support, though I've had students who were over their head" (VT2). "I think some weaknesses fall by the way side [because of the accommodations].... These accommodations are a good thing, though if you look at things like the honor role, it probably isn't fair." (VT2). We heard from many informants, however, that a small number of emotionally impaired students dramatically alter what goes on in classes they attend.

Writing

Teachers in our sample describe their writing instruction as both fitting with the Vermont Writing Project model and as stressing the mechanics of writing. They talk of voice and expression, but also strongly emphasize the importance of the mechanics of grammar and spelling. They seem to see some tension between a process approach and a mechanics emphasis, and often describe themselves as having moved more toward a process model in recent years, but most of them believe that they can adopt a process model without giving up the more traditional emphases on mechanics. They also see what they are doing as quite consistent with the portfolio assessment. Several indicated that their students write on a variety of topics, some of them in other content areas.

This combination of emphases plays itself out in the time devoted to writing instruction, as reported on our survey. The elementary teachers report spending more than three hours per week on the various stages of the writing process (prewriting, writing drafts, editing, etc.), but also report spending one and a half hours per week on grammar and spelling. Middle school teachers report a similar mix of writing and mechanics, with relatively more emphasis on grammar and less on spelling. This represents a considerable amount of classroom time on writing, especially when you consider that eighth-grade students must also spend some time writing in other subjects, at a minimum so that they can include writing in other subjects in their assessment portfolio.

The stress on developing the ability to communicate effectively through writing, especially in developing voice, came through in some interviews: "My goal is to free students up, to make them freer in expressing themselves and at the same time incorporate writing process skills. I try to incorporate grammar skills, at the same time, I want to make their writing more powerful and vivid" (VT2). Even in these comments, however, teachers sometimes expressed a concern for appropriate mechanics: "Kids come into 8th grade knowing a lot of mechanics and I don't do much with that.... One goal is to allow the 8th grade student the freedom to find his style or voice, acknowledging that...not anything goes. I see myself as a coach, an encourager...."

But many teachers indicated that, though they have adopted some version of a process approach, they saw mechanics as critically important:

> With portfolios, the children do a lot of writing now. Years ago they did little. [It's] not my favorite subject to teach. I prefer to work on grammar, rather than voice (VT2).
>
> My concern is spelling. We used to correct every error, but now we focus on simply expressing ideas, to the neglect of grammar and spelling. I have concentrated more on spelling and grammar, but I have also changed some of my goals over the last three years; previously I did very little with writing (VT2).
>
> We've always done the process writing. I start with lessons about nouns, verbs, or adjectives, and then move into a related writing. Students all do the same paper at the same time, each step at the same time and also go through the portfolio creation together.... Grammar is a [my] big focus, and the next focus [of mine] is content of the writing (VT2).

Furthermore, teachers believe that having student write across the subject areas is an important part of their writing instruction. Given the Common Core emphasis on curricular integration, teaching writing across the subject areas now seems more prominent: "One recent change in my goals is that I now think that students' best writing is topic writing in other subject areas. So I have taken a lot of the writing and worked it into other areas" (VT2). At the middle school level, teachers also mention that some subject area teachers have been unexpectedly cooperative in helping assess students' work (we later discuss how this teacher as well as other teachers also report some resistance among teachers to the writing reforms):

> One might have expected teachers in other subjects would resist involvement in portfolio assessment, but there has not been an outcry from others teachers who have to help score portfolios (VT1).

Mathematics

In Greenville, the teachers have been exploring new curriculum materials in mathematics, feeling very much in transition to a different kind of mathematics instruction. In Edwardstown, mathematics instruction has increased the amount of work on problem solving, but the teachers—especially the elementary teachers—feel that they have not yet worked out how new elements fit with the old. Although, as in writing, teachers seem unwilling to give up more traditional goals (in this case, computation), they see a problem-solving, real-world approach to mathematics as something that is both attractive and new.

> My goal is to have students solve on their own math problems using graphics and charts.... In math, we now do more problem solving, though it's difficult. Maybe the problems are too hard and we are pushing the children too hard, but maybe it's a beginning.... We're on the right track with portfolios, that children should be thinking more and not just doing things by rote...the new programs in math are also good (VT2).

> [My goals] are changing a bit. I have put more emphasis on problem-solving. I feel that if the state wants to go in that direction, it is appropriate for me (VT1).

Another elementary teacher emphasized that her students learn facts so that they can later do mathematics problems. "My primary goal is to provide a good working background with basic facts and then incorporate knowledge of facts into problem solving and have students see the connections between facts and problems." The state math reform helped her understand how problem-solving could be integrated into teaching. The reform served "to help me realize that I could incorporate the basic facts and didn't have to save problem solving for Fridays." Also, she says, "I am glad for the math reform. It has made me a better overall teacher and I now focus on the math's usefulness" (VT2). At the middle school level, this change is also evident.

> I have moved toward more problem solving and real problems (VT1).

> [Over the last three years, I] don't drill as much anymore on the basic skills and we changed textbook to one that lends itself to portfolios and NCTM standards. We increased the amount of material to teach [and] it used to be all practice skill computation, though I did a lot of estimation before anyway (VT2).

Teachers' responses to the questionnaire bear out this joint emphasis on problem solving and communication about mathematics (as stressed in the portfolio assessments and the Common Core) and traditional mathematics topics like computation and number facts. Elementary teachers reported spending more than one-third of their time on problem solving and communicating about mathematics, but also spend almost as much time on whole number computation and number facts. In middle school, emphasis on these areas is reduced as the curriculum expands to include algebra and fractions, but teachers still report spending about one-fifth of their time on problem solving and communication.

This joint emphasis carries over into use of curriculum materials. Use of manipulatives is often associated with current mathematics reforms. Elementary teachers in our sample reported dividing their time about equally between manipulatives, work with a textbook, and work on workbooks or worksheets. Middle-school mathematics was more text oriented, with about 70 percent of the time spent working in the text, with the remaining time divided between manipulatives and worksheets.

It is also clear that teachers see their current practice in mathematics as more of a change than their practice in teaching writing. The following quotes from interviewees were typical:

> I have changed my math goals but not my writing goals. I put more emphasis on problem solving and the strategies and use more manipulatives. [Basic skills are important, but math must be kept interesting] and "problem solving can be fun" (VT1).

> [My] math is now focused on practical life skills, being able to use math concepts to solve problems... My math goals have changed more than writing. [In math] there is much more writing and creation of problems which shows the students understand the concepts (VT2).

> I am stronger in writing, but I have gotten involved in math.... Kids are not accustomed to writing about a solution. I stress a structured problem solving approach.... There are lot of materials coming out to use as a source of problems to work on with students.... I am getting more and more confident about writing my own problems. I have tried to select problems to work on that are appropriate for individual students (VT2).

Another teacher mentioned some difficulties with the mathematics reform. Because of the reform, she now collaborates with the English teachers, focuses more on real-world problem solving, and her students write more in mathematics. She is nonetheless uncertain whether time spent on writing in mathematics is as important as the reform suggests.

> Students being able to express themselves verbally is more important than the writing. Who really writes about the math they do anyway.... Having the students write so much can discourage students who feel comfortable with math but are lower in their ability to write (VT1).

Teacher Capacity

Capacity-building for reform in mathematics and writing has not been extensive, judging by teachers' evaluations of formal opportunities to learn about the reform. These opportunities include teachers' participation in a variety of reform-related activities, including district in-services related to the reforms, university courses, and state-sponsored professional development and in-services (including participation in one of the state's 15 or so teacher networks focused on portfolio assessment in writing and mathematics).

Teachers, in general, do not report as especially helpful any particular one of the formal opportunities to learn about the reforms. They do, however, mention at least one district, university, or SDE-sponsored activity as helping them in some respect prepare for and understand the state reforms. Some teachers mention district in-services on portfolios as helpful, while other teachers mention a single university course, or their participation in a mathematics or writing teacher network. Teachers also mention that they do not typically receive follow-up support (VT1). And, a few teachers state that they did not find any activity helpful (VT1), though these teachers seem content with what's been done to help them prepare for and understand the state reforms (VT1).

Teachers report that a district or state in-service helped them understand basically what the assessments are about and how to do them. They are mixed, however, whether as a result their capacity to teach these subjects has improved (mathematics) or needs to be improved (writing). And, with few exceptions, teachers in these districts say that they rely most on the district curriculum coordinator and their colleagues for understanding and implementing reforms in mathematics and writing. "I turn to the girl downstairs who teaches 4th and other colleagues in the district" (VT1). "My peer and the reading aide" (VT1). This teacher also mentions that she took a course with Donald Graves. Once again, distance to the college was an issue. "I have no desire for a master's degree. I have been very choosy about the courses I take. I look at the distance factor." One person (VT1) said he would turn to the state mathematics consultant to help improve student learning in mathematics and didn't feel anyone in his school would be helpful.

Writing

Teachers do not perceive changes in writing instruction as requiring significant change. Capacity-building activities tied to the writing reform fit into the landscape of the Vermont writing project. Teachers perceived little need to alter writing instruction; they needed to adapt portfolio assessments to how they normally teach writing. Once teachers understood how to do this, they did not see much need for additional support.

> We have had the Vermont Writing Project for years. That was something we were required to do, but people take it and fit it to their own styles. The same is true of the work with portfolios...I am on the district's inservice committee; and the portfolio system has pretty much taken care of the writing so we concentrate our inservice programs on other areas (VT2).

Mathematics

The reform in mathematics, from teachers' perspective, requires significant instructional adaptation, e.g., integrating problem-solving and communication with other mathematical content. Teachers believe that they are able to implement the new requirements within established classroom routines. And they report that some district, university, or SDE-sponsored activity helped them prepare for and understand how to do this. Some teachers find that the workshops and courses for portfolios "have been a big help" (VT2). "The state portfolio meetings were helpful" (VT2).

There was some split among teachers whether their formal opportunities to learn about the reform helped them carry out the instruction needed to help students learn mathematics or only helped them learn how to do the portfolio assessment. Some teachers mention that they were helped to improve their mathematics instruction:

> The network is helpful in teaching because I see things other districts are doing. This year, for example, teachers from another district talked about having their kids do some scoring of math pieces. We hadn't been doing this, so we started doing that [too]. You do pick up activities (VT1).
>
> The portfolio in-service days were very important, how to present problems [to students] (VT2).
>
> The inservices have influenced my attitude toward time spent on basic facts vs problem solving (VT2).
>
> Math in the portfolio assessment was so totally new to me that I really needed inservice work. In the first year of the portfolio program, I took a week long summer institute. At the end of the week, the other teachers in the workshop and I were still wondering what we were doing. Now I see this as a birth of a new way for me to think about math. I am now a network leader, where I get to talk to other teachers about math instruction (VT2).

Other teachers felt that training in portfolio assessment in mathematics helped them assess their teaching, but felt that it did not help them with instruction (VT1).

> The inservice on portfolios were helpful in learning about assessment, but not for instruction (VT2).

Teachers seemed to rely most on themselves and whatever help their colleagues or the district curriculum coordinator could offer to adapt instruction to the mathematics assessment. Formal opportunities to learn about matching instruction to assessment were not often adequately made available to teachers.

Influence on Teachers from the Teachers' Perspective

It was clear in our interviews that participation in portfolio assessment was the biggest state influence on instruction in writing and mathematics. Teachers felt a much bigger influence in mathematics, primarily because they saw their writing instruction as already quite consistent with the portfolio process.

Regarding other state initiatives, teachers tended to see them as having little influence. Despite the SDE's attempts to communicate broadly about the Common Core, most teachers said that they knew little about it or about the frameworks under development. Some examples: "I have no idea what the Common Core and frameworks are, and I don't think there are any policy conflicts" (VT2). "I don't know much about the Common Core" (VT2). "Not familiar with the Common Core and frameworks and don't see any connection between them" (VT2). "No conflicts"...I've read the Common Core and it sounds nice; it's like a philosophy statement (VT2).

Most teachers had not been influenced much by the Local Standards Boards, and they were not very passionate about this change. Some like them even though it is hard to write a plan. "The [important] point is that you need to make a plan, rather than just pulling together whatever you have taken" (VT1). Others like them and thought they should be more demanding (VT2). Others couldn't quite figure out their purpose: "I don't know why we have to have them...but I do like that it is only teachers judging themselves" (VT2; VT1). Others knew the purpose but had not yet been affected. "The reason they did it was that the teaching association asked for more self-government, but they don't affect me. I'm not up for relicensure until 1995. I take what I want" (VT2). Another teacher felt that it was a lot of work and thought the motive behind it was to "make teachers look more professional" (VT2).

Although teachers sometimes express resentment about the state mandates, there still exists a great deal of teacher autonomy at the district level. In both interviews and the survey, teachers reported that they retain a strong influence over what is part of the curriculum and in the selection of instructional materials. On the survey, teachers reported that teachers had a high degree of influence over curriculum at their school and that they had a very high degree of control over selection of texts, topics, teaching techniques, grading practices in their classroom. Here are a number of typical comments from the interviews:

> I have a lot of different curriculum materials which I pick totally on my own...[the frameworks] won't have a lot of impact on what is done here. We are pretty much home based, with the district to back us up (VT2).
>
> I am mostly accountable to the principal.... We were free to look for options that we prefer, but they have been fairly similar to what the state wants (VT2).

> The district gives us a list of skills; the curriculum to teach those skills is very wide open.... Curriculum coverage is determined by the teacher (VT2).

> [We write our own curriculum] as long as we coordinate it with grades above and below.... It's always been that way (VT2). [This teacher also said that she had not seen much connection between curriculum changes and state assessment, "though we're leaning in that direction."]

Writing

As already mentioned, many teachers feel relatively little influence from the current writing reform because they see themselves as already teaching in ways consistent with the reform. The following comments are typical of teachers' views.

> [Over the last three years] the goals I have haven't changed, but because of the portfolio, the methods have. For one thing, students need to have pieces of writing that fall into different categories—narrative fiction, etc. So I make sure that students write something for every category. But I was doing that anyway... (VT1).

> My goal in writing [and math] is communication...[and] I don't see major changes in writing because I was already doing it (VT1).

> Long ago I started with process writing and I haven't made any major changes [in writing instruction] (VT1).

Other teachers feel that the writing portfolios support changes in writing instruction which have occurred over the past 10 or 15 years in Vermont. One teacher says that "the portfolios and scoring generated by the state [has been] quite positive for us, though it was imposed.... Portfolios help teachers focus on writing as something important and diminish teachers' discomfort with writing...and students' discomfort level with writing".... [Over the past three years] there has been an evolution away from a more mechanical emphasis to one that emphasizes writing process. But this change has been over more than three years... (VT2).

Though proportionally fewer, the writing reforms also seemed to expand some teachers' instructional focus and encourage sound educational practice. A fifth grade teacher says that "I didn't put as much emphasis on writing as I do now because of what the state and district is saying I should do" (VT1). Other teachers report that the portfolios have encouraged my writing styles to be more diverse [especially with expository writing] and I also do not push for finished products as much. My kids are proud of their work and the portfolios have merit. I have more content related to state assessment and there are requirements such as the portfolio scoring list that I have to meet. They have made my lessons more diverse (VT1).

The state assessment [has had a major influence on my writing instruction.... I find myself using terms linked to the portfolio... (VT1).

One other teacher feels that the writing reform requires changes across the curriculum. Three pieces of writing for the portfolio must come from a class other than the writing class in order for portfolio to be scored. Portfolios are pushing teachers in other subjects to focus on writing. "[R]ealistically, what has occurred is the result of the portfolio, and the portfolios will drive the change." Among teachers who feel that the writing reform has influenced instruction, there was the sense that implementation of the reform was either resisted or simply an add on to the way writing is customarily taught.

> [U]nfortunately, the other teachers don't want to take the time to do it [teach writing across the curriculum] (VT1).
>
> I am 51 percent in favor of portfolio assessment. I haven't resisted as much as some (VT1).
>
> The implementation differs from teacher to teacher. They can teach writing how they have always done it, they just have to do more of it (VT2).

Mathematics

In mathematics, many teachers believe that having to do portfolios has led them to change their practice. One teacher believes that portfolios were the most important education reform in the state. "Portfolios are wonderful, as are other things that bridge disciplines for middle school" (VT1). Other quotes are also typical of how teachers see the influence of the mathematics reforms.

> For math communication, the statewide portfolio assessment has driven some of the changes (VT1).
>
> I am stronger in writing, but I have gotten involved in math.... I am getting more and more confident about writing my own problems. I have tried to select problems to work on that are appropriate for individual students (VT2).
>
> The reform I'm most familiar with is the portfolios which I think has significantly influenced my math and writing instruction (VT1).

As with the writing reforms, teachers also report some dissatisfaction with the fact that state mandated reform and that "the reforms have had very little impact on some teachers in my school" (VT1). Another teacher says that the portfolio system is "the state's way to get teachers to change and teachers have griped. But the portfolios in place are much better. The program was [initially] disjointed and teachers felt it was imposed on them.... But it's an effective way to get teachers to change and I embrace the NCTM standards...I might not have done it otherwise" (VT2).

Facilitating Factors

Writing

Unlike in mathematics (see below), the district assessment in Edwardstown places some importance on process writing (VT1). Consequently, some teachers see the state and district assessments as mutually supportive. One third grade teacher says that she feels support from the state for the way she is teaching since the district assessment in writing also focuses on process writing. "This provides me with an incentive to work toward district goals" (VT1). An 8th grade teacher, states that he has taught writing "in the same basic style all along" but now feels that he is being encouraged to do it that way by the state in ways in he finds useful (VT1).

Mathematics

The facilitating factors in mathematics have been teachers' work with the district curriculum specialists and the simple requirement that they participate in the portfolio assessment. These have been discussed at greater length in other sections.

Inhibiting Factors

Two major general inhibiting factors were repeatedly mentioned. First, there was a sense that too many things were going on, with too little time and resources to do them. A danger here is that teachers (and others) will "burn out," losing motivation to carry out any of the reform efforts: "The main disadvantage is there's not enough money in the project. Vermont is taking on too much right now; I'm not sure the supervisory units, which the state is trying to make fiscally responsible for the assessment, will support this" (VT2).

Second, people worry that the state direction for reform will change before long, invalidating the effort put into the current efforts. Sometimes this worry is localized to the concern that the CCSO will move on to another position; at other times the fear is expressed that the portfolio assessment process will be abandoned, perhaps because of the difficulties with achieving reliability for state-level scoring. Some simply worry that the reforms will go away, "regardless of who is running the ship" (VT2). "More experienced teachers are the most worried about investing in something that won't last."

Regarding Act 230 there some problems with various logistics, including balancing standards for less capable students (VT2), and paying enough attention to regular students (VT2).

Writing

For writing, the main inhibiting factor is the amount of time teachers need to score the portfolios. Up through the year of our study, this problem was especially severe for fourth grade teachers, who had to score portfolios in two subject areas. The state shifted one of the portfolios to a different grade in 1994-95, but this problem will resurface if districts move toward using portfolios in several subjects, at all grades.

The fact that portfolios are only used at some grades is also seen as a difficulty. It means that teachers in fourth and eight grade have to spend time just teaching students about the process. It also means that students may encounter quite different expectations about writing when they move to higher grades, especially in the move to secondary school. Teachers hope that these difficulties will dissipate as expectations for writing spread to other grade levels: "Once the kids are into it and portfolios are in another grade, it should be easier" (VT2). "It would be so much nicer if students came into 4th grade already having experience doing things for the portfolio" (VT2).

Another inhibiting factor is that the emphasis on the aspects of writing used for scoring the portfolios will make it difficult to also cover other topics. This is a version of the "not enough time" problem, specific to instructional time needed to cover the curriculum. One teacher said, for example, that she did not like this change to portfolio assessment, claiming that it "detracts from other subjects. I have had to cut out other projects in other subjects" (VT1).

Mathematics

In both districts, teachers indicated that other tests students had to take pulled instruction in a different direction in mathematics. They had in mind the tests used in elementary grades for Chapter 1 purposes, as well as a new report card system under development in Greenville.

> The basic skills math report cards aren't enough. [Students] need to do more than check off lists. They are also somewhat contradictory to the portfolios. They [the checklists] aren't awful and parents need the information. In the end though, it's just more paperwork. Teachers who focus on them may skip the portfolio type of stuff and go back to the old basic skills (VT2).

As with writing, teachers were concerned that important topics in mathematics (e.g., computation) were being squeezed out by the emphasis on problem solving and communication. Coverage of content is a major concern, and the change is seen as additive, not as a replacement: "The hardest part in math is slowing down because of work on problem solving and communication as well as the other material. Students go at a good pace but not at the pace of the past with the other material. Students still have to take the SAT and I feel pressure.... I wish I didn't" (VT1).

And as with writing, teachers felt that scoring the portfolios simply took too much time. One middle school teacher said that she likes "very much the idea of portfolios and seeing progress in students' work and problem solving emphasis, though I dislike the idea of scoring and assessment since it takes a great deal of time that would be better spent in allowing teachers to develop projects that incorporate real-world math problems" (VT2).

Another middle school teacher pointed out that the fact that teachers teach large numbers of students in 42 minute blocks feels like a severe constraint. "There are too many students for each teacher to teach in this manner, especially with the portfolios" (VT1).

A few teachers mentioned the need to learn more about how to teach for these results. One elementary teacher felt that "changing my methods after doing it differently in math and writing is the biggest barrier" (VT1). Other teachers, however, felt that their colleagues were simply not taking advantage of the courses and workshops that would help them learn to teach in new ways. "Teachers need training; they haven't had it and don't necessarily think it is important" (VT2). "I think the teachers should take the NCTM more seriously instead of questioning where they came from...." Vermont has taken on a lot. Teachers think it is too much all at once. There are more workshops and courses offered this summer than ever before [but] a lot of teachers feel overwhelmed (VT2).

Two teachers also mentioned that kids lack the background knowledge to manage portfolio work. "The students reading level is low, which makes the reading of the math problems difficult" (VT2).

Discussion

One thing that makes the current wave of reform difficult, in Vermont as elsewhere in the country, is that many of the instructional aspects must be created, not just learned. For capacity building, this rules out a simple model in which those working in schools—teachers, but also administrators—simply attend classes or workshops to learn what they should do. Although there are some experts who can be especially helpful, no one has a ready-made package of instructional moves that teachers can decide to adopt. Goals for pupils are clearer than the teaching moves most likely to yield those results, though notions like "problem solving," "real-world math," "voice," and "effective communication" are themselves also under development.

Although Vermont's sequence of instructional reforms was probably determined by historical and political reasons, it fits well such a conception of reform. If the goals for pupils are clearer than the instructional means needed to achieve the desired results, then it is sensible to use a results-oriented approach to reform, with the hope that experiments with various instructional approaches will eventually determine which approaches lead most surely and expeditiously to the desired ends. By beginning with assessment, especially an assessment that tried to make its desired ends transparent, Vermont promoted reform without specifying the methods of instruction.

By extending the portfolio approach to teacher certification and program approval, the SDE maintained a consistent strategy: Focus on results, but let others work out how to get them. Develop explicit goals through a public, participatory process, so that support will be broad and lasting enough to carry through the difficult work of figuring out how to reach them.

One consequence of this approach is that as more is learned about what should be accomplished, and how, initial aspects of the reform must be revised and new aspects will begin to seem more prescriptive. In Vermont, the assessments must be revised to match the emerging content and performance standards. And whereas the Common Core ran little danger of being seen as a mandate, many fear that the framework just emerging will have more of that character.

From the perspective of teachers in our sample districts, the portfolio assessment has been by far the most salient aspect of the reform. For the moment, the major effect has been on teachers in the grades included in the assessments, though there were signs that districts themselves might take the initiative to move the portfolio approach to other grades. Because students needed work to put into their portfolios, teachers had to teach students how to do that work. From the teachers' perspective, this required relatively little change in writing instruction, but a major shift in mathematics.

From teachers' reports of their instruction, it seems that they have only partially adopted the goals implicit in the state portfolios, at least for the present. In writing, they continue to stress mechanics, even while indicating that they have been using a process approach to writing for many years. In mathematics, they continue to see traditional goals in computation as important, though they have less time to devote to it now that they are spending so much time on problem solving.

To a varying degree, teachers see a need to learn more about how to teach these subject areas, particularly in writing. Although, one would expect, most of the teachers say that they would seek help from colleagues, the district curriculum specialists played central roles in both of these districts. Many teachers mentioned turning to these specialists for help, as well as crediting them with being a major influence on changes that had occurred to date. These specialists both looked to national sources for a sense of students should be learning. One also saw Vermont's reform activities as critical, but the other gave them little attention. In both cases all those in the district agreed that the state activities alone would have had a much smaller influence. These district curriculum specialists have been critically important in encouraging teachers to learn more about reform possibilities, and then to learn more about how to pull them off.

Implications for Reform

Three points stand out as implications for reform.

- District curriculum specialists have the potential to play a pivotal role in reform. They can spend the time needed to learn about the nature of changes being advocated and to identify resources that teachers might use, yet can remain "local" enough to be credible to classroom teachers.

- Because of the changes in instruction *required* to use a portfolio assessment (i.e., just to have students produce the materials that must be included in a portfolio), it can influence instruction without being "high stakes."

- Although teachers say that they are willing to adopt the curricular emphases of current reforms (e.g., emphasis on problem solving and communication), they are simultaneously concerned about maintaining previous curricular emphases on computation and the mechanics of writing.

Implications for Capacity Building

Likewise, we can identify a few prominent implications for capacity building.

- Vermont's teacher networks have been valuable for helping teachers understand the mechanics and basic goals of portfolio assessment, but do not seem to have carried over to provide a means of developing teachers' instructional capacities in writing and mathematics.

- Teachers have a wide range of interests for their professional development, in which learning to teach according to current reforms is assigned relatively little priority. Thus, professional development programs established to meet the expressed needs of individual teachers seem unlikely to make a major contribution to systemic reform.

- Reports are mixed on the actual and possible contributions of higher education to capacity building for systemic reform. Most of the middle school teachers completed a masters' degree, typically at the nearby state college. Many teachers mentioned individual faculty members or courses as helpful, and the School Development Institutes have a good reputation. But others see institutions of higher education as out of touch with current changes in practice. Perhaps the resolution of these conflicting views comes in distinguishing the efforts of individuals and ancillary programs from the core activities of colleges of education.

Appendix A

An Examination of the Evolution of California State Educational Reform, 1983-1993[1]

Michael W. Kirst and Gary Yee

1993 marks the tenth anniversary of the educational "call to arms," *A Nation At Risk* (The National Commission on Excellence in Education 1983). It also marks the tenth anniversary of education under California State Superintendent of Schools Bill Honig and the passage of Senate Bill 813 (SB 813), California's far-reaching omnibus educational reform act. While the passage of SB 813 occurred independent of, not in response to, the recommendations outlined in *A Nation At Risk*, it reflected a concurrent statewide concern over the state of public education in California, and expressed the public's willingness to significantly change the direction and leadership for public education. What was the policy environment in California during this decade, what was the nature of the subsequent reforms, what influences affected their implementation, to what extent did they contribute to structural reform of education in California, and what were their long-term effects on pupils? This paper will review the past decade of state educational reform, identify policy trends, and seek to develop some explanatory factors which may have contributed to those trends.

Key Aspects of Reforms

The Decade Preceding 1983. What Led to SB 813?

In the decade preceding 1983, several significant events set the political and fiscal context for an increased state role in education. *Serrano v. Priest* (1976) required the state to reduce wealth-related expenditure differences, and Proposition 13 (1978) placed severe limits on local school districts' ability to raise funds through property tax levies. This resulted in a greater dependence on state funding by school districts, and more state involvement in local district education policy. School decisions were governed not only by district policy, but by statewide initiatives, court decisions, and a thick, five-volume state education code. Collective bargaining by district employees was legalized in 1976. The California Business Roundtable began its study of school reform in 1980. State and Federal categorical funding, early childhood, gifted, and special education funds, formerly designated for target populations, could be consolidated into a single school-wide plan (AB 777; 1981), controlled by a School Site Council (SSC). And a test, the California Basic Educational Skills Test (CBEST), was administered for the first time in 1982-83 to screen potential teacher-training enrollees, and to evaluate those seeking an emergency teaching credential.

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[1] Since the draft of this paper, several events which are referenced actually took place: Supt. Honig was convicted on conflict-of-interest charges in January 1993 and removed from office; his permanent successor has yet to be appointed. Proposition 174, the voucher initiative, was defeated in November 1993, by a 70-30 percent vote. The new statewide student assessment program, CLAS, was administered; school-wide results will be available in the fall 1993- individual student results will be reported starting in 1994. The first 37 Charter Schools opened for students in September. And legislation was passed allowing one district in default of its state loan to put up school property as repayment of that loan.

During the 1973-1982 era, California schools had experienced dramatic declines in some aspects of student academic performance, pupil enrollment, and financial resources (Guthrie et al. 1985). Policies in the seventies had focused on minimum standards, disadvantaged minorities, and the lower third of the achievement band, but despite significant increases in funding for categorical programs, high school achievement dropped below the national average (Kirst 1984). After a decade of declines in both student enrollment and general per-pupil expenditures (which had fallen below the national average), the 1982-83 year brought an increase in the student enrollment and a budget for education of $12.7 billion. Bill Honig was elected state superintendent of schools in 1982 on a reform platform emphasizing a return to high academic standards, a comprehensive, statewide reform strategy, and active public support for public education (Honig 1986).

SB 813 and the Influence of Bill Honig (1982-1993)

Superintendent Honig's education platform was embedded in the California Reform Act of 1983, also known as Senate Bill 813 (SB 813); it included 65 components which addressed a myriad of issues from graduation requirements to mentor teacher programs. SB 813 was supported by both the California Business Roundtable, the California Teachers Association (CTA) and California Federation of Teachers (CFT). Many of the reforms reflected meetings the Roundtable held in the early eighties on ways to improve public education. However, SB 813 was not passed without modification and without a fight; Governor Deukmejian protested that not enough was being exacted from teachers, and he pushed for additional reforms, including more explicit rules for teacher dismissal and layoff and a longer school year, in exchange for the extra state monies. The multiple components reflected the interests of various constituencies whose support was necessary to pass the $800 million package. A summary of the major reforms (Odden and Marsh 1987) are as follows:

- Increased high school graduation requirements to reflect California State University and University of California entrance requirements
- Model Curriculum Standards for grades nine through twelve
- Textbook selection criteria
- Improved and expanded California Assessment Program (CAP)
- Mentor Teacher Program

- Certification of teacher evaluators, alternative certification, and new teacher evaluation systems
- Local staff development for teachers and administrators
- School Improvement Program (SIP)
- Increases in homework and writing
- Tenth grade counseling
- Longer school day and longer school year
- Establishment of quality indicators
- A regents-type Golden State Examination
- Increased accountability

The California educational reform program was cited as a model reform package; it committed significant new monies, provided incentives for adoption, worked to upgrade the caliber of the teaching profession, established a school improvement agenda, and upgraded the accountability system. The major components of school reform, curriculum and instruction, assessment and accountability, and capacity building, were first brought together in SB 813. While the reforms of the 1970s attempted to humanize education and target services to specific students with categorical programs, SB 813 stressed tightening standards and intensifying efforts along a broad array of policy levers. Influenced by the effective schools research (Mesa 1984), the attention was directed towards establishing a rigorous core program for all students.

Reforms which required relatively minor structural changes, such as increased graduation requirements, and those for which the state had provided additional funding, such as an extended school year, increased counseling, and the addition of class periods, were quickly adopted by local districts. Proposed quality indicators included improved SAT scores, reduced dropout rates, higher attendance and graduation rates, and increased enrollment in academic courses (California State Department of Education 1985).

The main incentive for districts to adopt various components of the reform were the additional resources they would receive, for example, for extending the school day and school year, for designating teachers as mentors, and for increasing the student participation in the assessment program (Cash for CAP). Of the over 1100 school districts, only 14 declined to participate in both longer day and longer year funding; much of the funding went to increase teacher salaries, which had become significantly lower than the national average by 1983. Geographic regions shared Teacher Education and Computer Centers (TECC) centers, districts hired additional counselors, teachers applied for CTIIP (California Teacher Instructional Improvement Program) mini-grants (up to $2000), and schools applied for AB 803 innovation grants, all paid for by the state. Mentor Teacher salary supplements put an additional $45 million into the hands of 3.75 percent of the state's teachers in 1986-87 for specific projects that they had designed. AB 803 provided an additional $3 million for local school staff development.

The initial efforts at implementation often simply supported district level improvement strategies with additional resources. For example, most mentor teachers were employed initially to write curriculum for their districts. Because they were usually self-selecting, the notion of a career ladder for teacher-coaches never really materialized.

Despite the intention to upgrade the content of instruction, much of the initial staff development provided for in SB 813 ended up focusing on "clinical teaching and clinical supervision" (Guthrie 1987, p. 16). Rather than participating in professional development in the content areas, teachers were trained in generic lesson planning and administrators in generic teacher supervision. Teacher training programs, under the authority of a different state agency than the State Department of Education, were not obligated to coordinate their courses with any of the reform policies, such as upgraded curriculum or ongoing staff development. An alternative teacher certification program, The Teacher Trainee program, was little used except in Los Angeles.

Assessment and accountability were main features of the SB 813 reforms. Student outcome accountability included the mandatory California Assessment Program (CAP), (introduced by the state in 1972 as a way to assess school effectiveness rather than individual progress) and an annual Performance Report for high schools. In the beginning, CAP was little different from standardized, norm-referenced achievement tests such as CTBS; there was little relationship between the curriculum suggested in the new frameworks and the multiple choice test items. The Performance Report included data on each high school, including three new performance indicators: the percentage of students who obtained high scores on the SAT, the number of students who completed requirements for UC admission, and the percentage of students who obtained passing scores on Advanced Placement (AP) examinations.

Individual student assessment was not a significant component of SB 813. The Golden State examination was introduced to give individual honors recognition to students in mathematics (and now other academic areas). Student participation was strictly voluntary, and this assessment has had little apparent policy effect. A conceptual framework (Carter 1989) that describes most of the components of SB 813 and the linkages between the major components is listed in figure 1.

While policymakers hoped for a fundamental shift in educational direction, the reforms most readily adopted were those that "tweaked" the system (Kaplan 1985). They required little significant change in district structure or culture, or minimal negotiation with teacher unions. These incremental changes, called "first order" reforms by Cuban (1988), serve to improve the efficiency and effectiveness of the established system without requiring substantial structural change. A need for structural reform and changes in school governance—second order changes—were not clearly articulated in SB 813, but emerged later in state support for school restructuring, as reformers found that organizational structures and norms impeded efforts to implement the instructional shifts outlined in the legislation (Timar and Kirp 1988).

The School Improvement Program (SB 65), developed as an early childhood supplemental program in 1975, became a potential resource for structural reform at the site level.

The school self-study, the program quality review process which utilized quality indicators based on the curriculum frameworks, and the local governance aspects, all were redesigned from their initial emphasis on compliance to encourage "bottom up" flexibility and integration of various categorical programs. Under Honig, the Program Quality Review (PQR) process evolved from a compliance-driven assessment of categorical program outcomes at the school sites by state-trained teams, to a self-study review of school-wide alignment of curriculum and instruction to the frameworks conducted by the staffs themselves, with local support (Odden and Marsh 1987). Categorical monies could now be used school-wide, provided a representative School Site Council (SSC) was established to manage the program. The SI program goal became to create a self-renewing system that would be locally driven, that would secure high community and teacher commitment, and that could be fine-tuned as local conditions warranted (Guthrie et al. 1986). However, in the 1980s, School Improvement funds included planning money of only $30 per pupil per year; for an "average" school of 500 pupils, that amounts to only $15,000.

The Latter Half of the 1980s

Funding

In order to fully implement the reform program outlined in SB 813, a major effort was undertaken to mobilize public support and resources. State funding for education increased during this state economic growth period in the state to the extent that per-pupil spending was restored to the 1979-80 state level by 1986-87 (in constant dollars). However, the student population growth during this period overtook the funding growth to the extent that by 1989-90, funding per average daily attendance (ADA) began to decline once again. By 1991-92, funding per ADA declined to the 1985-86 level (figure 2), despite the continued growth in the numbers of limited English speaking students who often required additional services (figure 3).

SCA 55, adopted in 1986, provided a potential new source of locally-generated revenue for construction; local governing boards, with the approval of two-thirds of district voters, could incur bonded indebtedness for site acquisition and capital outlay, and then retire those bonds by temporarily increasing property tax rates.[2] Passage of the Lottery in 1987 signalled that the public was becoming weary of the additional tax burden of supporting schools, and was looking for a non-tax alternative. The Lottery gave schools an initial shot in the arm, although this funding source has subsequently provided less and less, in a pattern of declining public participation.[3] In addition, Boards of Education, with a simple majority vote, could impose developer fees for site acquisition and new school construction (Guthrie et al. 1986).

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[2] However, since 1986, less than half of the 247 local tax initiatives have met the requisite two-thirds majority required for approval.

[3] It currently provides less than 3 percent of the total state education revenues, down from an initial 7 percent.

An important feature of state school support is the extensive use of "categorical" funds for specific educational programs and target populations. These funds, about one-third of the total state budget, provide monies for legislatively designated programs such as Adult and Special Education, technology, Bilingual Education, and Child Development programs. As a result of a battle between Honig and the Governor over school funding, several categorical programs, such as bilingual education, Educational Impact Aid (EIA), and School Improvement Program (SIP), "sunsetted," meaning that the detailed specifications for the programs, but not the programs themselves, ceased to be valid. Despite this, funding has continued for these programs. While categorical funds are usually targeted to needy student populations, supplemental grants were authorized in 1988 for middle-class suburban districts that did not qualify for much categorical support; the grants were justified as a way of providing a "fair share" of the state's revenue to such districts without disturbing the basic aid funding formula (Picus 1993).

The need for new schools for the booming student population, the need for additional services for a poorer, more needy student population, and the recognition that the relative fiscal prosperity in California was ending, created a battle for control of the public education budget. While Honig continued to push for increases in the state's contribution to education, Governor Deukmejian consistently opposed new funding. With the Gann Initiative limits to state spending drawing near, and the recession kicking in, Honig and the educational establishment searched for a way to insure a stable, "non-politicized" level of funding for public education. The local property tax was capped by Proposition 13 in 1977, and few districts were able to muster the necessary two-thirds vote to enact a supplemental parcel tax.

Finally, in 1988, Proposition 98 and its companion SCA 1 (1989) was narrowly approved; it mandated that a fixed percentage of the state's budget be set aside for public education, thus in theory guaranteeing that the budget would not be the battlefield it had been in the past. However, instead of depoliticizing state funding of education, when the economy declined as it did in the late 1980s, Prop. 98 pitted education against other social services such as medical, welfare, and other public agencies for scarce state funds (Shimsaki 1992). It appeared as if education was not willing to share the budgetary cuts required by lower than anticipated revenues as a result of the severe recession which California experienced, and the state's inability to increase taxes. In a final irony, the supplemental grants reflected a shift away from support for poor, urban districts toward greater per-pupil equity in the total funds available to a school district, regardless of the extent of need in the school and community.

Frameworks

State curriculum frameworks were developed by teachers and subject area specialists to embody the new academic standards, to serve as the standard against which textbooks could be evaluated for adoption, and to provide a guideline for what is taught.

Each year, a framework for one of seven subject areas was submitted for adoption to the State Board of Education. Local districts were not required to adopt the frameworks, but since the frameworks are linked to statewide staff development, to the state-funded textbook adoption process, and to the content of CAP, districts generally supported their content. Teachers became more familiar with their content through the textbooks they used, staff development projects and professional teacher networks (such as Bay Area Writing Project and the California Science Instruction Network), and content areas tested by the CAP test. Moreover, many districts believed the state frameworks embodied improved curricular and instructional concepts. Common themes such as an emphasis on complex thinking skills, depth rather than breadth of content, and a multidisciplinary, multicultural perspective, promoted a more coherent and better aligned curriculum, both within and among subject areas.

The frameworks provided a way to standardize curriculum in each subject area, by providing content continuity and articulation through the grades and identifying appropriate instructional strategies. Frameworks were developed, one discipline per year, by a combination of classroom teachers and administrators, district curriculum developers, and disciplinary experts. The influence of professional discipline-based organizations such as the National Council of Teachers of Mathematics (NCTM) and the National Science Teachers Association (NSTA), and others, cannot be understated: their reports, and leaders from their ranks, as well as university researchers, formed a substantive base for most of the framework development.

The frameworks outlined what should be taught, but not how (Brandt 1989). One factor that led to the frameworks' emergence as a primary policy instrument was their link with textbook adoption. Frameworks provided a way to update and influence the content of textbooks, beyond simply checking the readability level and ethnic balance in the illustrations. For grades kindergarten through eight, textbook monies from the state could be spent only on state-adopted textbooks, and the adoption process required state-adopted textbook content to reflect the state frameworks. Publishers struggled to find ways to incorporate the content, philosophy and strategies into the traditional textbook; each purchase of their materials was accompanied by offers of extensive staff development. The new round of textbooks clearly reflect the publishers' attempts to align their materials with framework guidelines. However, since the frameworks advocated team teaching, integrated curricula, heterogeneous grouping, and, ironically, less reliance on textbooks, schools and districts began to see that fundamental structural and pedagogical changes might be necessary in order to implement content changes called for in the frameworks.

Assessment

CAP testing expanded from reading and math tests to history/social science, science, and writing. Significant numbers of teachers statewide were invited to participate in refinements and pilot testing; through this process teachers became more knowledgeable about both the content of the test and new assessment processes. As each CAP test was periodically revised to be more aligned with framework objectives, it reinforced the frameworks' prominence as a policy lever (Odden and Marsh 1987). Through steady refinement, CAP became widely acknowledged as a state-of-the-art assessment tool. Publication of test scores school by school, and district by district, in local newspapers and through real estate agents' multiple listings, made the test "high-stakes." The test's importance as a comparative measure of student achievement undoubtedly resulted in some distortions attributed to the desire of schools to improve their relative state ranking.

In 1990, a dispute between the Governor and the State Superintendent resulted in a loss of funding for the CAP program. In 1991, funding was reinstated for a "new" test designed to provide individual, performance-based assessment of student performance. This reflected a shift in test objectives from an analysis of what's taught to one of what's learned. The first of the new generation of tests, the California Learning Assessment System (CLAS), was field-tested in 1992. Tests will be administered at different grade levels than before; different disciplines will be tested at different grade levels to reduce the load at any one grade level. Beginning in 1994, individual student results will be reported.

Another component of assessment, the School Accountability Report Card (SARC), was part of the "Prop. 98" school finance package. Updated annually, the purpose of the SARC is to provide more detailed site-specific information to the local school community about conditions and progress being made at the school site level. While each district determines the format for the reports throughout its schools, they generally contain a school description and philosophy, data regarding student ethnicity, attendance, and achievement, information about teacher salaries, staff development and educational level, a description of teaching strategies and materials used, and a description of opportunities for community involvement. While still in the early stages, this self-assessment has been perceived as a "low-stakes" compliance requirement in most cases, and its effect as an accountability tool is minimal.

Capacity Building

In 1988, through the passage of SB 1882, California intensified and reorganized some innovative and effective staff development approaches, including six-week summer institutes and regional and local teacher networks. These are not yet widespread and involve relatively few teachers; their statewide effect has yet to be evaluated. It became apparent that more attention would have to be directed toward reform issues involving the quality of teachers and the quality of the teaching environment, the so-called "second wave" of reform (Guthrie et al. 1988). SB 1882 re-designed the whole area of staff development, and funded a three-tiered staff development strategy, which shifted funding away from centrally-directed categorical support for local district staff development (for example, the Mentor Teacher Support Program, and the mini-grant project program, CTIIP) toward university-supported teacher networks, such as California Science Information Network (CSIN), the California History Project (CHP), the California Math Project (CMP), the New Teacher Support Network, etc. Some county offices of education became the regional hubs for staff development, especially for smaller school districts. These networks focused on training site-based teams of teachers, and in some cases administrators, who became curriculum experts; they would then return to their sites with both curriculum and school change skills. This strategy by-passes district staff development departments and district-mandated training and encouraged site-based collegiality and self-study. However, it also depended on the dissemination of skills and information by a small percentage of trained teachers, and it is not yet clear whether this will occur to the degree necessary to sustain system-wide school change.

SB 813 was seen by some critics as primarily a centrally driven, curriculum-focused reform effort (Brandt 1989), but it did envision that structural, school-based change would occur as a result. The School Improvement program was seen as a way for teachers and the community to have a greater say in the way school decisions were made. Reports from the State Department of Education, such as "Caught in the Middle: Educational Reform for Young Adolescents in the California Public Schools" (1985), emphasized themes of greater teacher collaboration, more interdisciplinary instruction, and greater community involvement. Yet, changes in school site governance did not come automatically as a result of the School Improvement program, nor was it initially seen as necessary condition for school improvement. By the end of the 1980s, there was a general awareness that more substantive, second order reforms (Cuban 1988) were necessary if the high standards were to be achieved; merely tinkering with the current class schedules or the course outlines, or intensifying efforts in various areas, or even providing substantial financial incentives, was insufficient to generate the momentum for significant structural reform. Scattered efforts to change high schools crystallized around movements such as the State Department of Education's middle schools initiative, which linked newly-restructured middle schools together, and the Coalition of Essential Schools, which networked "restructuring" high schools to others across the nation. The Business Roundtable suggested a reform agenda for schools, this time focusing not only on standards but on a fundamental restructuring of school-site governance relationships.

The result was SB 1274, which recognized the importance of local school site restructuring, and offered some grants for planning and implementing restructured governance at the site level; the director of this program was formerly on the staff of the Coalition of Essential Schools. But SB 1274 received only $6 million for planning grants in the 1992 budget. With such a limited budget, it is questionable whether schools without the initial capacity to plan and develop locally will be given the necessary opportunity and/or pressure to learn from the model schools.

Within the reform agenda of SB 813, changes in the pre-service training of new teachers seemed to be the least-addressed area. In addition to the annual need to replace an estimated 20,000 teachers due to attrition, there is a requirement for an additional 4000 new teachers due to enrollment increases. The State Department of Education did not have authority to closely couple teacher preparation programs within the California State University system, where 79 percent of new teachers are trained, or the private colleges to the reform agenda (Guthrie et al. 1991). In addition, the CBEST test, implemented to ensure minimum competency of new teachers, is being challenged in the courts for screening out minority teacher candidates at a significantly higher rate than white candidates (figure 4). Beyond issues of ethnic representation, this has added to the problem of recruiting sufficient numbers of bilingual teachers to staff bilingual classrooms throughout the state.

School Reform at the Crossroads: The 1990s

The California reform agenda had evolved during the eighties from a push to improve education by raising academic standards to a more coordinated "systemic" reform. The state's coordination of curriculum frameworks, CAP assessment, textbook revisions, tiered staff development, and restructured governance has been touted as a model of systemic reform.

Systemic Reform

By the 1990s, in California, the curriculum, textbook adoption, and assessment aspects of the reform package had become fairly well integrated. Initially, the SB 813 reforms of 1983 had a comprehensive, but non-integrated feel; this was because the frameworks, the CAP test, and the textbooks were as yet uncoordinated; each was on its own planning and implementation schedule. After five years, the frameworks became the primary document to which the other policy instruments were linked. To be eligible for state adoption, textbooks up to the eighth grade must conform to standards outlined in the frameworks. The CAP program has evolved into a sophisticated, performance-based, authentic assessment program which reflects the curriculum standards outlined in the frameworks. The state-specified Program Quality Review school assessment uses quality indicators based on the frameworks.

One difficulty in maintaining integration among the various instruments is the relative time lag which occurs from the time the frameworks are developed (that itself is a two to three year process), to the time that teachers are trained, to the time the textbooks are received by teachers (usually three or more years after the frameworks), to the time that the CAP test is revised and employed (another three years). The technology of framework production generally exceeds the ability of the state to follow up with staff development and implementation. Textbook production, review and adoption generally lag framework adoption by at least two years. The CAP tests were not initially aligned with the new curriculum outlined by either the frameworks, the curriculum standards, or the texts. Multiple choice examinations precluded performance-based authentic assessment, although the latter has been planned and piloted for use in the new set of tests. Because a framework for a new subject area is developed each year, schools must prepare for a new subject area before the materials and assessment process has been developed for the subject area introduced in previous years. For example, the English-Language Arts Framework was adopted in 1987; textbooks were received by districts in 1990, and the integrated language arts examination was field-tested in 1992. A new language arts framework is scheduled for completion in 1993. In the meantime, Frameworks have been adopted for Mathematics, Science, History-Social Science, Foreign Language, and Health.

Another potential obstacle to classroom implementation of systemic reform is the local option to dissent from the framework. This has occurred most prominently around the History-Social Studies Framework, around issues of cultural diversity and perspective; as a result, a few districts, predominantly those with large minority populations, declined to adopt any of the state-approved textbooks, preferring to produce and pay for their own local materials. Consequently, the alignment of materials, frameworks, assessment, and capacity building is dependent on local support and implementation.

Professional development has also been unevenly integrated; few districts mandate that veteran teachers must enroll in extensive inservice re-training to the professional expectations outlined in the frameworks. Most staff development for veteran teachers remains voluntary. Within the last five years, there have been many summer institutes where teachers are paid to attend and/or develop curriculum for their districts; however, participation by veteran teachers is usually voluntary. There is a requirement for new teachers and administrators to participate in ongoing professional development.

University/school networks such as the California Writing Project (CWP), California Math Project (CMP), California Science Project (CSP) have become major staff development providers. This has put teachers into positions as trainers and developers of instructional strategies, and has put university researchers closer to the practitioner. These networks have also generated interest in school site-based decision-making, i.e., restructuring, as teachers have taken greater responsibility for instructional leadership within their schools. This movement has been supported statewide by SB 1274 which funded selected schools interested in restructuring. These networks, along with state-sponsored reform networks such as in middle schools, math and science, work experience, etc., that are still operating, deserve field research to assess their overall impact.

Still, this process has been very uneven. It clearly depends on a core of teachers willing and able to undertake long-term training in single disciplines, and their willingness and ability to communicate the changes mandated in the frameworks to their colleagues. To date, that core has been relatively small. In secondary schools, that may mean training department by department; in elementary schools, the training issue is compounded by the fact that each teacher must learn a new set of curriculum and appropriate instructional strategies for that subject area each year. Nevertheless, researchers report that teachers appreciate the direction of the frameworks and try to conform, despite the lack of significant inservice or the pressure of CAP or other assessment mechanisms (Cohen and Ball 1990).

Teacher education is also difficult to integrate, because of its different line of authorization (Fuhrman et al. 1992). There is little control over the content of teacher training programs; the pre-service curriculum is not subject to any control or direct influence by the state Department of Education (Kirst 1992), although this has begun, through the Commission on Teacher Certification (CTC).[4] As a result, new teachers arriving at school sites seem to have been at least introduced to the subject area content outlined in the frameworks. One issue that does negatively impact on schools is the inability of teacher training programs to develop and graduate significant numbers of minority teachers. Two teacher preparation examinations that new teachers are required to take (the NTE and the CBEST) show substantially lower pass rates for Blacks, Asians, and Hispanics (Guthrie et al. 1991).

The Fiscal Context

California's fiscal situation has reached crisis proportions; the national recession hit California relatively late, but coupled with military base closures, has meant that funds will continue to be short. In 1990, the state experienced a $3.6 billion shortfall, followed by a $12 billion revenue gap in 1991 (Shultz 1993). California's per-pupil spending on education dropped from 23rd in the nation in 1978 to 39th in 1992, and the numbers promise to get worse, as the pupil population grows. There is no money for class size reduction. Several districts experienced severe budget shortfalls. Los Angeles laid off teachers and instituted pay cuts as a result of the severe fiscal pressures. Because of their precarious financial status, some districts requested state loans. In approving the loans, the state assigned a "trustee" with at least informal "advice and consent" powers by the state Superintendent of Schools, to oversee the budget process and the cuts necessary to balance the district budgets. Several districts requested, and received, the authorization to offer Certificates of Participation, much like long term bonds. One district defaulted on its state loan and has offered to "trade" surplus district property to repay the loan; approval is dependent upon legislation sponsored by a local state legislator. The independence of local districts was severely limited by their dependence on bail-out help from the state and the difficulty of obtaining the two/thirds majority necessary to pass parcel tax initiatives. The recession has caused various public interests (i.e., health, welfare, law enforcement, and education) to compete with each other for limited monies.

Total state funding for schools increased from $12.6 billion in 1982-83, to $26.9 billion in 1991-92. One-third of the education budget was appropriated for categorically funded programs, special education consuming the largest share. In 1982-83 dollars, per pupil (ADA) funding increased from $3,046 per ADA in 1982-83 to $3,373 per ADA in 1991-92. While the funding per unit of ADA, adjusted for inflation, has increased by 13 percent over the decade, it should be noted that the base year, 1982-83, represented a relative "low water mark" in funding (Legislative Analyst's Office 1991). The years 1989-1992 showed decreases in per ADA funding, due to increases in enrollment.

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[4] In an informal survey of four teacher preparation programs in the Bay Area, including one at a state university, I found that each program utilized the appropriate framework as the central focus of their curriculum courses. Directors of these programs stated that their widespread use began at the end of the 1980s. In addition, they stated that at least one member of each of their faculties has been involved in the development of one or more frameworks.

The high cost of building new schools in California and the dire need for more classrooms created a significant change in the school system. The emergence of year round scheduling for schools became a potential solution to the problem of overcrowding and the need for more classroom capacity in the elementary schools. More than a million students in 200 school districts now attend year-round schools (California Department of Education 1993). Initially touted as both an important instructional improvement and a cost-effective solution for handling the rapidly expanding student population, year round schools have yet to be demonstrated to have positively affected instruction. In addition, overcrowding will soon affect high schools where the year round solution may be even more difficult to implement.

The Demographic Context

The effects of policy initiatives in California are affected by a rapidly changing student and teacher demographic profile (Guthrie et al. 1992). While the total budget for education continues to increase, the pupil population is predicted to grow at an annual rate in excess of 200,000 students;[5] this is the equivalent of one new school with 23 teachers per day. Per pupil funding has been declining since 1990, and state resources are stretched to the limit, so funding is uncertain for high-cost items such as capital improvements, technology, lower class size, and staff development.

- The number of students has increased each year since 1982, from 4,065,486, to 5,107,145 in 1991 (figure 5). Of the new students, one in four came from a poverty household, and one in six came from a family where English was not the first language.

- Rate of growth in the student enrollment is increasing, from .5 in 1982-83, to 3.7 in 1991 (rate of growth in 1991-92 was 3.2 percent).

- 985,000 students were assessed to be limited English proficient in 1991, twice as many as in 1983.

- The percentage of white students declined from 75 percent in 1968 to 44 percent in 1992. The percentage of Asian/Pacific Islander students increased from 3 percent to 11 percent, Hispanic from 14 percent to 35 percent; Black from 8 percent to 9 percent. The actual numbers of all ethnic groups, including white students, has increased over the decade.

- There was a persistent teacher shortage, especially minority teachers. The increase in the numbers of students and the restoration of a sixth period in the high school schedule exacerbated the teacher shortage during this period, since more teachers were needed. In addition, since most of the emphasis in classes shifted away from optional and vocational classes towards A-F requirements, since requirements to teach in one's major or minor became more stringent, and since the numbers of limited English students increased, much of that additional need was for specialized teachers, who, during this period were also being wooed by growing businesses and industries in California. As a result, there is a requirement in 1993 for 12,000 additional bilingual teachers. Yet the percentages of ethnic minorities who passed the CBEST test was significantly lower than the percentage of whites who passed. This, coupled with a significantly lower college-going rate for Black and Hispanic students, resulted in a new teacher pool which included only 23 percent minority teachers, despite a "majority-minority" student population (figure 6).

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[5] For 1992-93, the growth was actually 110,000 students.

The Political Context

The nineties brought a series of jolts that have diverted some of the initial energy and influence from the reforms, especially relative to urban school districts. Despite an initial euphoria over the apparent agreement between Superintendent Honig and newly-elected Governor Pete Wilson over the educational agenda, a rift has developed over the direction of that agenda, and the amount of funding that will be attached to it. Honig's own attention may have been deflected by his battles with the State Board of Education and Governor Wilson for the right to determine the state's education agenda. Honig's public trial for conflict of interest drew time and attention away from his reform agenda (Guthrie et al. 1992).

California has long prided itself on possessing and supporting a strong public education system, from kindergarten through university. Nevertheless, by 1982, per pupil education funding had declined to its lowest level since 1976-77. Honig signaled his leadership over the educational agenda with his ability to orchestrate the passage of SB 813 and the infusion of $800 million into the education budget (Kaplan 1985), despite the Governor's unwillingness to support new programs (Shultz 1993). His comprehensive program for rigorous standards drew support for middle class families and their quest for higher education, and these families have largely been supportive of him in two re-election campaigns, to the extent that he was frequently mentioned for governor in 1990. Some minority groups have been lukewarm to Honig, especially as state support of categorical programs declined, although he has attempted to maintain communication and support through his ethnic advisory councils.

The legislature, the business community, and the teachers' unions seem also to have been solidly behind the highly visible and articulate Honig. At the same time, by the end of 1990, his conflicts with the State Board and his open quarrels with the governor made him more vulnerable to his political opponents. Both Governors Deukmejian and Wilson appeared to initially support Honig's position; Wilson himself campaigned as an "education governor." But that support eroded as financial pressures forced difficult budget choices to be made. The role of the two governors in educational policy increased as funding shifted to the state in the aftermath of Prop 13. Interest groups supporting social services whose budgets were not guaranteed by Prop 98 have exerted pressure on education's supporters for a more flexible allocation of Prop 98 funds set aside for education. Schools were forced to compete with health and welfare programs for a share of the "shrinking pie" (Shultz 1993). While he has had opposition from both governors, the religious right, and most recently from his own State Board of Education,[6] he continues to have support from the education infrastructure as a whole despite his upcoming trial.

Honig has faced four major educational challenges: establishing world-class standards to prepare students for highly skilled, technically-oriented jobs, stanching the flow of students from middle class families to private schools, meeting the needs of increasing numbers of diverse, poor and limited-English speaking youth, and maintaining a coherent educational infrastructure for a rapidly expanding student population within a shrinking financial base. His strategy seems to have been to focus on the first, which initially pleased his political base, and to hope that it brings the other three areas along. The numbers of students attending private school has decreased since 1983 in the middle and senior high school grades, but has been increasing in the primary grades. Some question whether the needs of minority students are being met. While improvements have been made in the decade, the gaps still remain between white and minority groups (Guthrie et al. 1992). Minority concerns about the curricular reforms were exemplified in the debate over the history-social studies framework development and subsequent textbook adoption. It was argued that the textbooks under-represented and inaccurately portrayed the history and perspectives of minority peoples, and reflected the values and interests of the white community (Waugh 1990). The reform efforts have produced the high standards but little in the way of capacity for widespread implementation or the elimination of disparities in performance between white and minority students.

Finally, advocates of school choice and some form of voucher system began to surface in earnest in 1991; they reflect an opinion that the state reform agenda has failed large numbers of parents. The threat of a voucher initiative calls into question whether there is a sufficient belief in and a political support for the current reform agenda. The second decade after *A Nation At Risk* finds the state struggling with the difficult task of maintaining the momentum of school reform within the budgetary constraints of severe recession. Even as the reforms of 1983 were being transformed by the realities of implementation, the reforms themselves are threatened by the lack of continued funding and political consensus. The "iron triangle of shifting demographics, declining economics, and intensifying politics" (Guthrie et al. 1990) further fragments the reform agenda and calls into question whether coordinated, statewide, systemic reform will continue.

As a result, in the 1990s, there has been a shift in emphasis to greater support for local decision-making, integrated children's services which involved more of the community, and a renewal of interest in some categorical funding. The inability to significantly improve perceptions of the quality of schools, both in the inner-city, and in the suburbs, has increased political pressure by an older, non-minority electorate to support vouchers for parents to spend in either private or public schools. While touted as an opportunity to provide poor minority parents the opportunities to send their children to private schools, opponents argue that it is little more than an effort to channel public resources to support largely white, high-achieving students and their parents who already attend private schools (Haggin 1993). The teachers' unions and the Democrats in the legislature counter-punched by supporting a Honig-supported Charter Schools program, and introducing legislation increasing school choice within the public school systems. The future of the voucher initiative is uncertain.

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[6] A recent court decision took broad powers from the state superintendent and gave them to the state Board of Education; recent (1993) legislation to return those powers to the superintendent was vetoed by Governor Wilson (Association of California School Administrators 1993).

A notable omission of local school boards from the decade's educational reform agenda reflected a lack of confidence in the education leadership of local boards (Guthrie et al. 1990). The state began the reform decade with an expanding economy and a need for a highly trained workforce. SB 813 came at a critical time when enrollments were rising, teacher salaries were low, and the effects of Prop 13 were severely affecting school districts. The resulting reliance on increased state funding for schools increased the influence of the state over local school policy (Guthrie et al. 1990). The recent bankruptcy in Richmond, and its takeover by a state-appointed trustee, demonstrates that the final authority for local school governance now resides with the state. The Performance Improvement Program (PIP) identification process also signals the state's willingness to step in and direct underachieving schools.[7]

The state itself continues to be handcuffed by a recession, by Prop 13 and by Gann, from raising sufficient funds to meet the capital and mandated program needs of schools in the coming decade, let alone fund wide-scale reforms. Few districts have been able to muster the ⅔ votes necessary to support a parcel tax which could raise additional funds. And the voucher initiative and the charter school experiment may signal public dissatisfaction with the results of the SB 813 decade, an increased desire for local community control over its schools, and an uncertain public commitment to public education as presently constituted.

Summary of Phases of Reform

The 1983 California school reform began with the more manageable components: upgrading of the curriculum, increasing the professional standards for teachers and administrators, extending "seat time," and increasing the academic graduation requirements. By 1985, 90 percent of the state's school districts had met the graduation requirements, and extended their school year. These are largely "first order" reforms, designed to intensify effort and improve the efficiency of pre-existing organizational features (Cuban 1984).

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[7] Schools identified as low-achieving are given three years to improve. If they do not, the state has the option of installing a trustee.

The policy instruments themselves evolved over time. The matrix-designed CAP test has given way to individual-performance assessments (CLAS). Curriculum reform itself shifted from curriculum standards towards more emphasis on a thinking curriculum as represented by the disciplinary frameworks, integrating higher order thinking skills into subject area instruction. Instead of simply mandating stricter requirements and assuming that they themselves will improve instruction and student performance, implementation is assumed to reflect the core concepts outlined in the frameworks, but adapted to the local needs and capacity. In some cases, teacher-leaders have led the way to restructured governance at their school sites.

Implementation

There remains a major question regarding the classroom implementation of the curriculum and instruction reforms outlined in the reform agenda. As noted above, the pace of reform is slower than its leadership had hoped for, even for first order changes such as raising academic standards, or improving course content. It is difficult to determine the extent to which classroom instruction has changed over time. Three factors created variable levels of implementation at the district level.

First, implementation remains voluntary. Compliance through threat of sanctions is rarely invoked (Fuhrman and Elmore 1990). The capacity of the state to support or enforce policy at the local level has actually declined: the Department of Education has cut over 200 positions during the decade.

Second, direct coupling of policies to classroom activities rarely occurred; for example, efforts to improve teacher supervision by principals through a more rigorous evaluation process has not been sustained. Instead, the state attempted to influence implementation through: the use of local teachers, administrators, and teacher training colleges to help draft policy documents; the mobilization of public opinion and interest around certain items, such as test scores; and the linkage of incentives to policy compliance, such as with textbook adoption.

Third, intensification efforts have resulted in implementation overload in many schools. This is partly a result of the requirement to develop each aspect of the reform in sequence: framework, staff development, textbook adoption, local textbook adoption, local inservice, testing revision. This process begins anew each year for one more of the seven curriculum areas. The timing places particularly difficult demands on elementary teachers: it requires them to both sustain the implementation of prior year's reforms and to learn and incorporate the new year's changes into the school day. In order to manage simultaneous reforms across multiple initiatives, as well as across multiple subject areas, school site reform requires more than intensification of customary efforts. It also required changes in school organization, governance and the decision-making structure (Timar and Kirp 1988).

Policy Effects

As alluded to above, changes in the demographic, fiscal, and political context seem to have contributed to a limited effect of the reforms on student achievement, despite increasing coherence and alignment between the various policy components. Nevertheless, some significant gains are noted in data which show longitudinal improvements in both student achievement and dropout rates. But other data, which compares California's performance with other states, show strongly that in the aggregate, both educational mediocrity and performance disparities continue to exist in about the same proportion as before the reforms began (Guthrie et al. 1992, 1991, 1990).

- While the average SAT scores in 1992 have declined when compared to 1984, 14,500 more students took the test. 26 percent more seniors scored above 500 in mathematics, and 13 percent more scored above 450 on the verbal portion (figure 7). Explanations of this phenomenon point to improved preparation for students overall, while increases in the numbers of test takers and minority test takers who have traditionally done more poorly on the tests lower the overall average. While California students score above the national mean in mathematics, they score below in the verbal portion.

- The number of high school graduates who have completed the University of California's A-F course requirements has shown a gradual increase, although the gap between minority students and white students has not decreased (figure 8).

- The performance of California students on the Advanced Placement tests in 1992 remained below the national mean on nearly all tests, but the absolute numbers of students who have scored three or better increased by 188 percent when compared to 1984. Yet in a national test of eighth graders, the National Assessment of Educational Progress, California students still scored below the national norms (figure 9).

- At grade levels eight and twelve, California's CAP student scores were higher in 1990 than they were at the beginning of the test. However, the performance gap between ethnic groups remains (figure 10). The average CAP score increase over this period has been 4.4 percent, although the scores are only roughly comparable over time due to the evolving nature of the test itself. Scores in grade 3 "peaked" in 1987, and have generally declined since then, although the 1990 scores are over 10 percent higher than in 1983.

- The dropout rate declined from 25 percent in 1986 to 18 percent in 1991 (figure 11).

The rationale for a more demanding academic curriculum was that all students would benefit, regardless of whether or not they were intending to go to college. Jobs for high school graduates required a higher level of literacy and computational skills than ever, and job recruiters were complaining that graduates were unprepared for the world of work. In that regard, it appears that all ethnic groups improved. However, what has emerged is that despite growth in many indicators by all ethnic groups, the gap between them remains substantial. As a result, the relative "rank order" in terms of academic performance remains as severe or more so as before: white, Asian, Hispanic, Black. Despite the efforts to intensify the standards, overall student achievement is still below the national average by most measures.

Some Explanations for the Slow Pace of Reform

One would have expected that the "state of the art" reforms embodied in SB 813, coupled with strong public support, additional resources, and stable leadership from Superintendent Honig, would have created a significant revolution in California education, but the performance effects belie that expectation. One must seek some possible explanations. Explanations in California generally take one of three forms: the problems were too great and the funding was insufficient (there is a need to intensify effort); the assessment is flawed (reform occurred but was not likely to be observed by existing tests); and the reforms were the wrong kind (there is a need for a different direction for reform).

Some argue that insufficient funding for the reforms limited their full implementation. California has had a strong tradition of support for public education, but the steady increases in state per pupil expenditures in the eighties ended abruptly with the statewide recession; CAP scores mirror that trend in funding. *Serrano v. Priest*, Prop 13, and SB 813 have increased districts' reliance on state funding for local districts and prevented local districts from raising additional funding for their own schools. The data do show some improvement in college-going rates, AP exams taken, etc., but these don't necessarily indicate significant growth for minorities and underachievers, nor do they indicate that sustainable, structural changes have occurred that would be resistant to revenue variables. Supplemental grants re-distributed funds more evenly across school districts and shifted focus away from targeted student populations to high end achievement goals which failed to substantially reduce the disparities between high and low achieving student populations.

While to a great extent court decisions have evened out state funding across the state, the resources available for educational improvement still vary: some schools are able to raise funds from supplemental sources—parent assessments and local parcel taxes, for example—and some districts must spend more for non-education related expenses- security and vandalism repair, for example. And the disparities between schools and school districts make it difficult to expect that student performance or district performance will be uniform, simply because standards are. Therefore, one might argue that disparities in funding and student background prevented educational equity from occurring. While funding has grown, due to growths in the student population much of the new monies have gone to maintaining class sizes , and increasing teacher salaries to compensate for real dollar losses in the decade preceding 1983. The expansion of resources is tied directly to trends in the state economy, and the nineties confront public education with the prospects of a tight budget and few resources for expanding programs on a massive statewide scale. Some have argued that it is essential for school districts to be able to raise their own funds, most likely through a reduction in the ⅔ rule for new local assessments such as parcel taxes, but passage of the necessary constitutional amendment seems remote (Kirst 1992).

Second, it is possible to argue that significant and lasting changes have occurred, but that the indicators used to evaluate policy effects are not able to measure them. The ability of standardized tests such as CAP to evaluate educational quality is limited. Multiple choice examinations have been the norm, yet much of the content of curriculum and instruction reforms as outlined in the frameworks is not amenable to that sort of evaluation. The most recent frameworks have consistently recommended a move toward authentic assessment (California Department of Education 1992). In addition, the massive demographic changes that occurred in the state during this decade may also mask changes that have been put into place; this may be one reason that the performance gaps among ethnic groups have not shown any significant decrease. Therefore, it is possible that the revolution has occurred, but is difficult to measure. Some teachers have noted that their practice has changed as a result of changes in the curriculum outlined in the frameworks (Odden and Marsh 1987). As a result, alternative, performance-based "authentic" assessment strategies will be implemented in 1993. At the same time, however, these new tests will provide individual information, with uncertain effects on classroom practice. They will probably raise the stakes for teachers and the public at the local level without equipping teachers with resources or training to address deficiencies in curriculum or instruction.

Third, it is possible that the policy changes instituted at the state level simply do not significantly affect instructional practice in the classroom (Timar and Kirp 1988). It was much easier to change old course offerings than to change the nature of teaching strategies or to initiate a thinking, problem solving, communications-based curriculum. While the initial *A Nation At Risk* call was for a drastic restructuring of education, the solutions themselves were somewhat incremental. What began as intensification of current school practice (i.e., more class hours, more course offerings) and improvement of instructional technology (CAP, frameworks, curriculum standards) became touted as a statewide "second order" change, but result in "first order" adaptations of existing structures. Those reforms that did not require structural change were readily adopted, but did not have the kinds of effects that were anticipated. Those that did require substantive change, changed the least, or are still in the process of changing. As a result, attention has shifted to other policy levers, which affect organizational arrangements, local decision-making, and long-term staff development and support. While the Business Roundtable initially moved to articulate uniformly high standards and expectations, a decade later it has become a leader in the movement towards local initiative in the implementation of that policy and the restructuring movement, the "second wave" of reform. The focus on a coordinated effort at the sites to implement curriculum and instructional reform, assessed by new instruments, with attention to collegiality and teacher professionalism, and with local support, represent the third, "systemic" wave.

A fourth perspective is that the kinds of fundamental restructuring of education that were first envisioned require a political and policy consensus that is sustainable over time. What does history tell us about the potential success of such structural reform efforts? That it is indeed difficult to hold together such a consensus in a state with such shifting and competing political constituencies, especially when resources are shrinking yet needs for a broad range of services grows. Kirst and Meister (1985) suggest that reforms which develop powerful political constituencies, are cost-effective, and are easy to monitor are the ones most likely to last. They cite programs such as compensatory education and bilingual education as structural reforms which have persisted. On the other hand, Cuban argues that few efforts to induce fundamental or second order change of education meet with much success. He cites such reforms as student-centered instruction, open-space architecture, non-graded schools, programmed learning, and flexible scheduling as examples which "have seldom found a permanent home in the classrooms and schools of the nation." (Cuban 1988, p. 343). Parts of those reforms have been adapted and incorporated into the organizational norms of schooling, especially if they serve to reinforce or enhance the productivity of those structures, in other words, they became "first order" reforms. He argues that policymakers should not look down on those incremental adaptations, but recognize that they have benefit and value at the teacher and classroom level. "For those who seek fundamental, second-order changes that will sweep away current structures and start anew, as was done in the mid-19th century, basic social and political changes would need to occur outside of schools," Cuban adds.

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